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ABSTRACT

Described in this directory are marine activities on the coasts of North Carolina, South Carolina, and Georgia, and the adjacent offshore area, known administratively as the Coastal Plains Region. The facilities for each state are described within these categories: educational institutions, state agencies, federal agencies, and industrial organizations. There are nearly 60 entries with the following information provided with each: senior official, scientific staff (by disciplines), major interests, primary research disciplines, primary services, financial sponsorship, shore laboratory facilities and equipment, research vessels and instrumentation, availability of facilities for use by non-organizational individuals, individuals to contact for use of facilities, publications, and available reference materials. (PR)

ED054930

# DEVELOPMENT ACTIVITIES

IN THE

# MARINE ENVIRONMENT

OF THE

# COASTAL PLAINS REGION

## *Directory of Facilities*

U.S. DEPARTMENT OF HEALTH,
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SE 011 369

COASTAL PLAINS
CENTER FOR MARINE DEVELOPMENT SERVICES
1971

Directory of Facilities

# DEVELOPMENT ACTIVITIES IN THE MARINE ENVIRONMENT OF THE COASTAL PLAINS REGION

Publication 71-1

Coastal Plains
Center for Marine Development Services
Washington, D. C.

March 1971



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## COASTAL PLAINS REGIONAL COMMISSION

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| Robert W. Scott | State Co-Chairman<br>Governor of North Carolina |
| Jimmy Carter | Governor of Georgia |
| John C. West | Governor of South Carolina |
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♦ ♦ ♦

## COASTAL PLAINS
## CENTER FOR MARINE DEVELOPMENT SERVICES

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| Philip G. Hill | Oceanographer-Geologist |
| Christyna E. Mecca, Ph.D. | Biologist |

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## INTRODUCTION

In August, 1970, the Coastal Plains Center published a *Directory of Personnel in Research, Technology, Education, Administration and Management.* More than 500 names of individuals concerned with the marine development activities of the Coastal Plains Region were listed in this Directory.

As a companion reference work, the Coastal Plains Center is now publishing a *Directory of Facilities.* The Center believes that there are more marine-involved organizations than are recorded in this Directory, but the data needed to include them in this publication were not obtainable. The Center hopes that the first edition of the Directory will lead to others, each reflecting the growing involvement of the Coastal Plains Region in marine environmental development and protection. In the process of publishing successive editions, the Center will build and maintain a file of up-to-date information on facilities for the assistance of concerned organizations and individuals.

Each organization included in this Directory was requested to provide photographs of reproducible quality of its laboratory facilities and/or research vessels for use in this publication. One photograph from each organization that responded to the request has been utilized.

This edition of the Directory was prepared by Philip G. Hill of the Center's Staff.

Frederick Betz, Jr., Ph.D.
*Director*

# GEORGIA

## BRUNSWICK JUNIOR COLLEGE

**FOURTH STREET AT ALTAMA**
**BRUNSWICK, GEORGIA 31520**

**DEPARTMENT OF BIOLOGY**

**Senior Official:** John W. Teel, Ph.D., President

**Scientific Staff:** 3 Biologists

**Major Interests:** Marine biology

**Primary Research Disciplines:** Biological oceanography, Ecology

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** 100% State Government

**Shore Laboratory Facilities and Equipment:** Standard laboratory equipment necessary for teaching and basic research

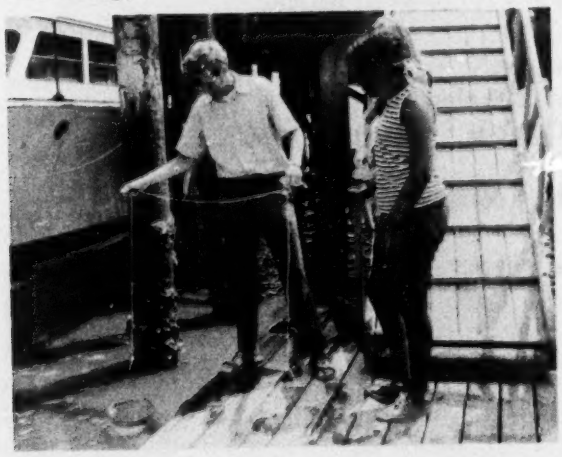
**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** The Clara Wood Gould Memorial Library, located on campus, houses over 12,500 volumes. Of this total, approximately 2,000 volumes deal with the physical sciences, biomedical sciences, and engineering and technology.



**Brunswick Junior College students participating in a field sampling experiment.**

*Photo courtesy of Brunswick Junior College*

## EMORY UNIVERSITY
**ATLANTA, GEORGIA 30322**

**DEPARTMENT OF BIOLOGY**
**DEPARTMENT OF GEOLOGY**

**Senior Official:** W. D. Burbanck, Ph.D., Department of Biology
C. T. Allen, Ph.D., Department of Geology

**Scientific Staff:** 7 Biologists, 4 Geologists, 3 Biometrists

**Major Interests:** Ecological studies of the Altamaha River from its source to its mouth

**Primary Research Disciplines:** Physical oceanography, Biological oceanography, Geological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Compilation and statistical analysis, Consulting

**Financial Sponsorship:** 80% Federal Government, 15% Industrial Corporation, 5% Non-Profit Private Organization

**Shore Laboratory Facilities and Equipment:** One small trailer is used as a shore-side laboratory. Students and investigators are housed and fed at the facilities of Epworth-by-the-Sea on St. Simon's Island.

**Research Vessels and Instrumentation:** The *R/V Driftwood,* 62 ft., 40 tons powered by twin 225 h.p. diesel engines, has accommodations for seven. Instrumentation includes:

"A" frame
Conventional grabs and drags
Sea water pump
"Instant Ocean" tank-compressor-aerator
Three drum winch

**Availability of Facilities for Use by Non-Organizational Individuals:** Facilities are available only for teaching or research at a fee of $150 per day.

**Individuals to Contact for Use of Facilities:**

W. D. Burbanck, Ph.D., Department of Biology
C. T. Allen, Ph.D., Department of Geology

**Publications:** Graduate theses upon their completion

**Reference Material Available:** Marine related reference materials are held in the Emory University Library. Out of a total almost 900,000 holdings, 72,000 pertain to science and technology.

## GEORGIA INSTITUTE OF TECHNOLOGY
**ATLANTA, GEORGIA 30332**

### SCHOOL OF ARCHITECTURE

**Senior Official:** Paul M. Heffernan, Director

**Scientific Staff:** 1 Architect, 3 City planners

**Major Interests:** Planning coastal resources development and planning

**Primary Research Disciplines:** Architectural engineering

**Primary Services:** Architectural design, Structural design

**Financial Sponsorship:** Information not provided

**Shore Laboratory Facilities and Equipment:** A well equipped photo laboratory, a woodworking shop used for model construction, an auditorium, and projection equipment

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** An extensive collection of regulations for land and building development control along with architecture and city planning references

## Georgia Institute of Technology – Continued

### SCHOOL OF BIOLOGY

**Senior Official:** Edward L. Fincher, Ph.D., Acting Director

**Scientific Staff:** 3 Biologists

**Major Interests:** Biological aspects of the marine environment

**Primary Research Disciplines:** Bacteriology, Molecular biology, Microbiology

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $154,174 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** These facilities consist of cell culture laboratories, a bacteriological laboratory, and an electron microscope laboratory. Special equipment includes:

Salt water aquaria
Biophotometer
Chromatographic columns
Electron microscope
Electron (paramagnetic) spin resonance spectrometer

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** The library of the Georgia Institute of Technology contains over 456,500 volumes. Of this total, approximately 219,000 volumes deal with engineering and technology, 114,000 with the physical sciences, and 18,300 with the biomedical sciences.**

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

**Source: National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education and Welfare. *Library Statistics of Colleges and Universities, Data for Individual Institutions*, Washington, D.C., 1969.

## Georgia Institute of Technology — Continued

### SCHOOL OF CERAMIC ENGINEERING

**Senior Official:** Lane Mitchell, Ph.D., P.E., Director

**Scientific Staff:** 6 Engineers, 6 Geophysicists

**Major Interests:** Natural environment systems

**Primary Research Disciplines:** Chemical oceanography, Geology, Geophysics, Sedimentology, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $108,423 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** These facilities consist of a ceramics processing laboratory, a ceramic kiln laboratory, and an electronic ceramic testing laboratory. Special equipment includes:

- Amino acid analyzer
- Column and thin layer chromatography equipment
- X-ray diffractometers
- Automatic dilutor
- Millivoltmeter
- Spectrometers:
  - Mossbauer
  - MS-10 mass
  - Solid-source
- Spectrophotometers:
  - Atomic absorption
  - UV-visible
  - X-ray emission

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Information not provided

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### SCHOOL OF CHEMICAL ENGINEERING

**Senior Official:** G. L. Bridger, Ph.D., Director

**Scientific Staff:** 5 Engineers

**Major Interests:** Air-sea interfacial phenomena, air pollution studies, desalination processes, electrolytic corrosion of metals, and the development of fertilizers for beach grasses used for erosion control

**Primary Research Disciplines:** Air-sea interaction, Chemistry

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $322,992 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** In addition to standard chemical engineering laboratories, facilities are also available for conducting research in metallurgy, cryogenics, micromeritics, and fertilizer technology.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

**Georgia Institute of Technology — Continued**

**SCHOOL OF CHEMISTRY**

**Senior Official:** William M. Spicer, Ph.D., Director

**Scientific Staff:** 4 Chemists

**Major Interests:** Chemistry of water

**Primary Research Disciplines:** Water chemistry, Chemical oceanography

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $706,367 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** Some of the equipment in the laboratories of the School of Chemistry includes:

Gouy balance for measuring magnetic susceptibilities
Gas liquid chromatographs
200 tube automatic transfer counter - current distribution apparatus
Vapor pressure osmometer
Light scattering photometer
Bendix automatic polarimeter
Polarographs
Ebert spectrograph for magnetoopics research
3 Mass spectrometers
Spectrophotometers:
5 Infrared
Lasar Ramen
5 UV
Spectropolarimeter
Differential thermal analysis and thermogravimetric analysis equipment
Isotopic tracer study equipment
Single crystal X-ray diffraction equipment

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### SCHOOL OF CIVIL ENGINEERING

**Senior Official:** William M. Sangster, Ph.D., P.E., Director

**Scientific Staff:** 12 Engineers

**Major Interests:** Pollution control, Ecology of coastal areas, Sediment transport, Marine structure design

**Primary Research Disciplines:** Fluid mechanics, Hydraulics, Hydrology, Sanitary engineering, Water resources planning and management

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** Information not provided

**Shore Laboratory Facilities and Equipment:** The laboratories at the school include those used for sanitary engineering, hydraulics, and structures studies. Equipment includes:

- Carbon-hydrogen-nitrogen analyzer
- Organic carbon analyzer
- Gas-liquid chromatograph
- Tilting-bed flume
- Various fixed-bed flumes
- Continuous recording fluorometer
- Flexible hydraulic loading system
- Atomic absorption spectrometer
- Tri-carb liquid scintillation spectrometer

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Information not provided

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

## Georgia Institute of Technology — Continued

### SCHOOL OF ENGINEERING SCIENCE AND MECHANICS

**Senior Official:** Milton E. Raville, Ph.D., Director

**Scientific Staff:** 4 Engineers

**Major Interests:** Wave propagation and materials, Structural analysis, Vibrations, Acoustics, Fluid mechanics

**Primary Research Disciplines:** Engineering mechanics

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $114,610 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Facilities and Equipment:**

Laboratories:
- Computing
- Fluid mechanics
- Experimental stress analysis
- Materials sciences
- Photoelasticity
- Shop
- Vibrations

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### SCHOOL OF GEOPHYSICAL SCIENCES

**Senior Official:** Charles E. Weaver, Ph.D., Director

**Scientific Staff:** 5 Geochemists

**Major Interests:** Geology of coastal and offshore areas.

**Primary Research Disciplines:** Geochemistry, Geological oceanography, Geology, Geophysics

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $105,500 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:**

- Automatic amino acid analyzer
- High speed centrifuge
- Column and thin layer chromotography equipment
- X-ray diffractometer
- Gravity meter
- Millivoltmeter
- Spectrometers:
  - Mossbaur
  - MS-10
  - Solid state
  - X-ray emission - vacuum
- Atomic absorption spectrophotometer
- UV-visible spectrophotometer

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### SCHOOL OF NUCLEAR ENGINEERING

**Senior Official:** C. J. Roberts, Ph.D., Director

**Scientific Staff:** 2 Engineers, 3 Chemists, 1 Physicist

**Major Interests:** Nuclear research and development as it applies to the marine environment

**Primary Research Disciplines:** Nuclear technology

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $160,404 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:**

Ultrasonic bath
Gas chromatographic facilities
Teletype computer remote terminal
PDP-8/I data processor for on-line analysis, control, and data collection
200 kv Cockcroft-Walton type fast neutron generator with a peak neutron output of $10^{11}$ n/sec.
Hot cell facility with remote manipulators with a capacity of 50 kilocuries of cobalt-60
Radioisotope hoods with shielded glove boxes
Laboratories:
- Bacteriological
- Radiochemistry
- Water quality

The Georgia Tech Research Reactor, a one megawatt, heavy-water cooled and moderated reactor fueled with enriched uranium
Training reactor - AGN-201
2 Gamma-ray spectrometers

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organization Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### SCHOOL OF PHYSICS

**Senior Official:** James R. Stevenson, Ph.D., Director

**Scientific Staff:** 2 Physicists

**Major Interests:** Underwater acoustics and associated instrumentation

**Primary Research Disciplines:** Instrumentation, Underwater acoustics

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The school had a research budget of $624,710 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** Excellent facilities for conducting research and training in underwater acoustics

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

### CHEMICAL SCIENCES AND MATERIALS DIVISION
### ENGINEERING EXPERIMENT STATION

**Senior Official:** Frederick Bellinger, D.Eng., Chief

**Scientific Staff:** 5 Engineers, 1 Chemist, 1 Biologist, 1 Geophysicist, 2 Geologists

**Major Interests:** Underwater acoustics, Waste treatment, Estuarine studies, Atmospheric contamination, Geophysical studies, Stream biology

**Primary Research Disciplines:** Minerals engineering, Micromeritics, Water engineering, Hydraulics, Mechanical and industrial sciences, Industrial products, Fertilizer technology

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** The Division had a research budget of $895,000 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** Some of the special facilities and equipment included in the Division are:

- Salt spray chamber
- Gravimeters
- Laboratories:
  - Fertilizer technology
  - Fog and smoke study
  - Minerals benefication
- Vertical magnetometer
- Dual probe for radiometric surveys
- 5 Reinforced concrete propellant and pressure study rooms
- Mobile 16 trace exploration seismograph
- Infrared spectrophotometer
- Recording spectrophotometer
- Deep water tanks (30 ft. diameter x 30 ft. deep)
- Eight-parameter truck mounted water quality recording unit

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Reports and findings of completed research projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology — Continued

**ELECTRONICS DIVISION**
**ENGINEERING EXPERIMENT STATION**

**Senior Official:** Richard C. Johnson, Ph.D., Chief

**Scientific Staff:** 3 Engineers, 4 Physicists

**Major Interests:** Communications, Radar, Antennas, Telemetry as applied to the marine environment

**Primary Research Disciplines:** Communications, Radar, Navigation, Geophysics, Bioengineering, Instrumentation, Laser applications

**Primary Services:** Data collection, Data analysis, Equipment design and development, Equipment testing and evaluation

**Financial Sponsorship:** The Division had a research budget of $1,296,201 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** The laboratories of this Division which relate to marine research include:

Antenna test ranges
Laboratories:
- Communications
- Electromagnetic materials
- Interference spectrometer
- Laser

2 Mobile measurements
- Radar

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.



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## Georgia Institute of Technology — Continued

### HIGH TEMPERATURE MATERIALS DIVISION ENGINEERING EXPERIMENT STATION

**Senior Official:** J. D. Walton, Jr., Chief

**Scientific Staff:** 6 Engineers

**Major Interests:** The use of ceramic materials in the marine environment

**Primary Research Disciplines:** Ceramic engineering

**Primary Services:** Data collection, Data analysis, Equipment design and development, Equipment testing and evaluation

**Financial Sponsorship:** The division had a research budget of $268,760 for FY 1970. A specific breakdown of sponsorship was not provided.*

**Shore Laboratory Facilities and Equipment:** Some of the laboratories and equipment in this Division include:

Arc-plasma jet with vacuum chamber
Ceramic felting unit
Filament winding machine
Various furnaces and ovens
Metal powder spray guns
Isostatic press capable of pressures up to 30,000 psi
Physical test equipment
Presses and mills

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Information not provided

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

**Remarks:**

*Source: Engineering Experiment Station, Georgia Institute of Technology. *Directory of Scientific Resources in Georgia, 1969-1970*, Third Edition, Atlanta, Georgia, 1970.

## Georgia Institute of Technology – Continued

### ENVIRONMENTAL RESOURCES CENTER

**Senior Official:** C. E. Kindsvater, Director

**Scientific Staff:** 4 Engineers, 1 Geographer, 1 Political scientist

**Major Interests:** Coordination of water resources education and research activities

**Primary Research Disciplines:** Coastal environment

**Primary Services:** Planning and administration

**Financial Sponsorship:** Information not provided

**Shore Laboratory Facilities and Equipment:** As a coordinating organization, the Environmental Resources Center does not maintain any laboratories of its own, but assists in the cooperative use of other laboratories throughout the state.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not applicable

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research reports upon completion of projects

**Reference Material Available:** For this information, refer to the Georgia Institute of Technology, School of Biology.

## GEORGIA SOUTHERN COLLEGE
**STATESBORO, GEORGIA 30458**

### DEPARTMENT OF GEOLOGY

**Senior Official:** H. S. Hanson, Ph.D.

**Scientific Staff:** 4 Geologists

**Major Interests:** Marine geology, Coastal geology, Remote sensing

**Primary Research Disciplines:** Geological oceanography

**Primary Services:** Not applicable

**Financial Sponsorship:** 100% State Government

**Shore Laboratory Facilities and Equipment:** Staff members are research associates with Skidaway Institute of Oceanography and, in this manner, have the use of Skidaway's laboratories and equipment.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** Standard reference works and current oceanographic journals are available.

## GEORGIA STATE UNIVERSITY

**33 GILMER STREET**
**ATLANTA, GEORGIA 30303**

### DEPARTMENT OF BIOLOGY

**Senior Official:** D. G. Ahearn, Ph.D.

**Scientific Staff:** 5 Biologists

**Major Interests:** Ecology, Physiology, Systematics of marine occurring yeasts

**Primary Research Disciplines:** Biological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Compilation and statistical analysis, Consulting

**Financial Sponsorship:** 20% Federal Government, 75% State Government, 5% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** Standard laboratories and equipment for teaching and basic research

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** SPECTRUM, *Monograph Series in the Arts and Sciences,* No. 1. First issue now in press. Non-serial items are also published as they become available.

**Reference Material Available:** The University's library contains over 214,000 volumes. Of this total, approximately 10,700 pertain to the physical sciences, 8,500 pertain to the biological sciences, and 4,300 pertain to engineering and technology.

## SKIDAWAY INSTITUTE OF OCEANOGRAPHY

**55 WEST BLUFF ROAD**
**SAVANNAH, GEORGIA 31406**

**Specific Division:** Not applicable

**Senior Official:** David W. Menzel, Ph.D., Director

**Scientific Staff:** 1 Oceanographer, 1 Biologist, 2 Engineers, 1 Draftsman, 3 Chemists, 3 Technicians, 1 Nutritionist

**Major Interests:** Aquaculture, Physical oceanography, Pollution

**Primary Research Disciplines:** Physical oceanography, Air-sea interaction, Chemical oceanography, Biological oceanography, Geological oceanography, Fisheries, Bathymetry, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Equipment testing and evaluation, Equipment design and development, Compilation and statistical analysis, Investigations performed on a contract basis, Consulting

**Financial Sponsorship:** 35% Federal Government, 60% State Government, 5% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** The main building of the Institute is 17,000 square feet and houses offices, classrooms, an auditorium, and four laboratories. A large circular building houses a laboratory, feed mixture facilities, and water system for fresh water aquaculture studies. In addition, the Institute maintains a complete machine shop for fabrication of needed items and repairs of equipment. Available dock facilities can handle vessels up to 100 feet in length and deep water ship piers are under construction. Dormitories, guest accommodations, and storage buildings are also available. The equipment and laboratories available include:

Gas chromatograph - Beckman
4 KV X-ray diffractometer and accessories - General Electric
Laboratories:
- Chemical
- Core sample studies
- Geochemical
- Instrumentation
- X-ray

Dual beam oscilloscope - Textronix
Atomic absorption spectrophotometer - Beckman
UV-visible spectrophotometer

**Research Vessels and Instrumentation:** A 54 foot Burger wood hull powered by a gas twin screw engine accommodates four scientists. Instrumentation includes:

Current speed and direction measurer
Bendix depth recorder
Electric winch and boom

30 foot Revel Craft cruiser powered by a gas single screw engine; the vessel can sleep six.

## Skidaway Institute of Oceanography — Continued

36 foot Coast Guard life boat, diesel powered; this vessel is used primarily for trawling.

30 foot diesel tug with a 75 foot steel barge; the barge is used for transporting vehicles up to 30 tons. Instrumentation onboard the tug includes:

Depth sounder
Radar
Radio

In addition to the vessels described above, the Institute also maintains several small boats used for local work and passenger service.

**Availability of Facilities for Use by Non-Organization Individuals:** Available on a contract basis

**Individuals to Contact for Use of Facilities:** Lee H. Knight, Assistant Director, Services

**Publications:** None

**Reference Material Available:** 240 volumes of scientific publications, numerous reports, government publications and reviews, plus current subscriptions to 22 scientific journals

## UNIVERSITY OF GEORGIA MARINE INSTITUTE

**SAPELO ISLAND, GEORGIA 31327**

**INTERDEPARTMENTAL**

**Senior Official:** Vernon J. Henry, Jr., Ph.D.

**Scientific Staff:** 1 Oceanographer, 6 Biologists, 3 Geologists

**Major Interests:** Ecology, Estuarine and marsh studies, Oceanography

**Primary Research Disciplines:** Biological oceanography, Geological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Consulting, Investigations performed on a contract or fee basis

**Financial Sponsorship:** 43% Federal Government, 42% State Government, 15% Non-Profit Private Organization

**Shore Laboratory Facilities and Equipment:** The laboratory facilities include a radioisotope laboratory and a salt water laboratory. In addition, a machine shop, carpenter shop, motor vehicle repair shop, docks, and a marine railway are available for maintenance and repair work. Equipment includes:

Spade corer
Marsh buggy
Mobile drilling rig
Industrial x-ray machine

**Research Vessels and Instrumentation:** The *R/V Kit Jones,* a 63 ft. 8 in., 23 ton vessel powered by a 197 h.p. diesel engine; the vessel has accommodations for four scientists and is used for conducting estuarine and continental shelf and slope studies. A shipboard laboratory is equipped to carry out all types of sea water analysis. Instrumentation includes:

Autopilot
Bathythermographs
Magnetic compass
Recording fathometer
Navigation systems - Loran-A and Loran-C
Plankton nets
Radar - Decca 202
Bottom samplers
Underwater television system
FM transceiver
AM transmitter and receiver
Hydraulic winch with 2,400 feet of wire
Hydrowinch with 2,000 feet of wire

The *R/V Striker*, a 33 ft., 10 ton vessel powered by twin 440 h.p. diesel engines; the ship has accommodations for two scientists and is used for general estuarine studies and near shore biological and water sampling. Equipment includes:

## University of Georgia Marine Institute — Continued

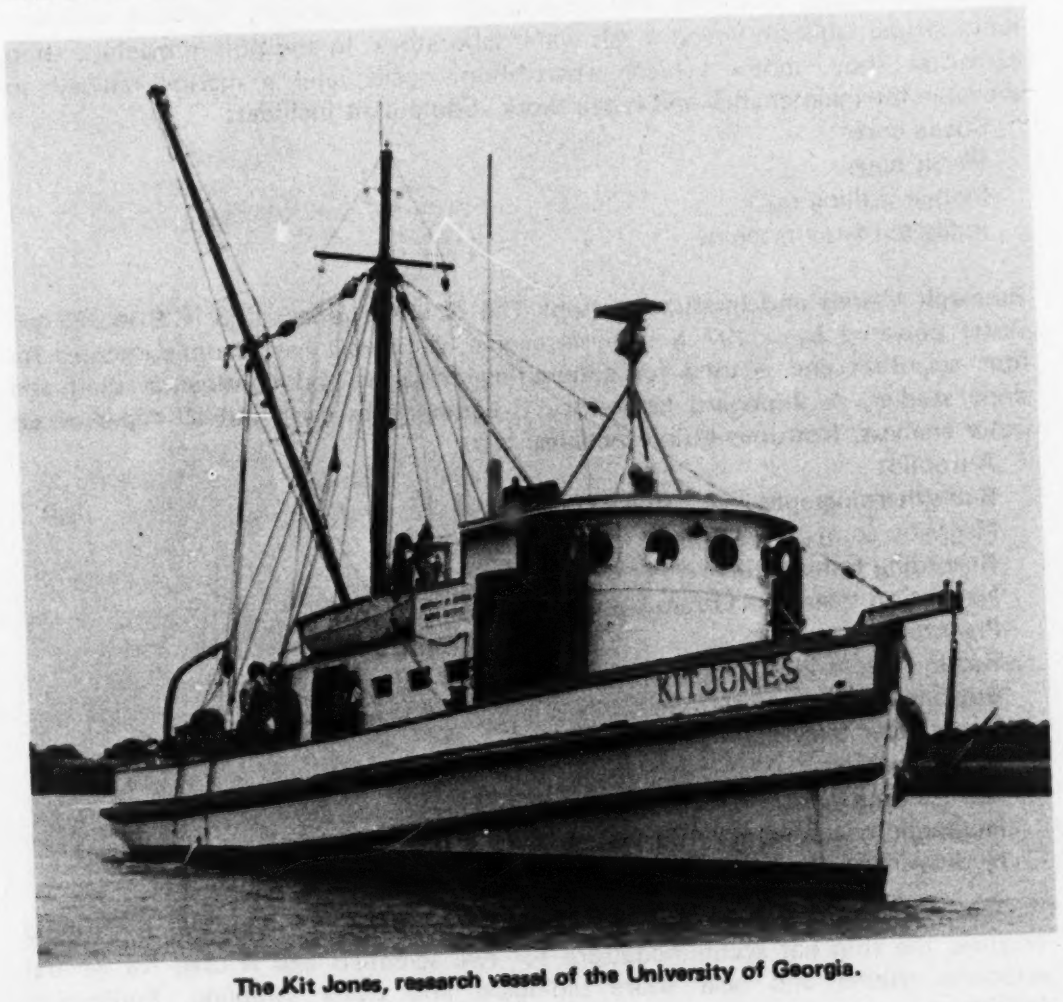
Biological and water sampling gear
Magnetic compass
Radar - Decca 101
FM transceiver
AM transmitter and receiver

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:**
Vernon J. Henry, Jr., Ph.D.
Albert G. Greene, Jr., Ph.D.

**Publications:** Reports are usually published upon completion of projects

**Reference Material Available:** An excellent collection of books dealing with the marine sciences and allied fields, along with all major journals in the fields of interest of the resident staff




**The Kit Jones, research vessel of the University of Georgia.**

***Photo courtesy of the University of Georgia***

## GEORGIA DEPARTMENT OF MINES, MINING AND GEOLOGY

**19 HUNTER STREET, S. W.**
**ATLANTA, GEORGIA 30334**

**Specific Division:** Not applicable

**Senior Official:** J. H. Auvil, Jr., Director

**Scientific Staff:** 1 Oceanographer, 10 Geologists, 3 Engineers, 1 Chemist, 1 Hydrographer, 1 Draftsman, 6 Technicians

**Major Interests:** Geology, Oceanography

**Primary Research Disciplines:** Physical oceanography, Geological oceanography, Bathymetry, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Planning and administration, Compilation and statistical analysis, Consulting

**Financial Sponsorship:** 100% State Government

**Shore Laboratory Facilities and Equipment:** In addition to standard laboratory equipment, the Department of Mines, Mining and Geology also has available in its laboratories the following:

Moisture balance
Brightness meter
Photoelectric colorimeter
Crushing and grinding equipment
Flotation unit
Calcining oven
pH meter
Spectroline scanner
Sieves and shakers for grain size determination
Spectrograph
Atomic absorption spectrophotometer
Viscometer
X-ray diffraction unit

**Research Vessels and Instrumentation:** One 18 ft. trihedral fiberglass boat powered by a 100 h.p. single screw engine and containing the following instrumentation:

Digital depth recorder
Radio direction finder
Grab-sampler equipment
Navigation equipment - Raydist
Plankton sampler
2 Scuba gear sets
Sediment profile equipment

In addition, the Department also has two 14 ft. aluminum boats powered by 5 h.p. outboard motors.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** *Georgia Mineral Review* (Quarterly)

**Reference Material Available:** Information not provided

## GEORGIA GAME AND FISH COMMISSION

**P. O. BOX 1097**
**BRUNSWICK, GEORGIA 31520**

### COASTAL FISHERIES RESEARCH AND DEVELOPMENT PROGRAM

**Senior Official:** William W. Anderson, Chief

**Scientific Staff:** 5 Biologists, 2 Technicians

**Major Interests:** Ecological studies of Georgia's estuarine waters

**Primary Research Disciplines:** Biological oceanography, Ecology, Fisheries, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Consulting, Planning and administration

**Financial Sponsorship:** 75% Federal Government, 25% State Government

**Shore Laboratory Facilities and Equipment:** Laboratory facilities are located in the Georgia Game and Fish Commission Building in Brunswick. Only standard laboratory equipment is available.

**Research Vessels and Instrumentation:** The *R/V Anna* is a 60 foot shrimp trawler containing the following instrumentation:

Depth recorder
Fish finder
Navigation system - Loran
Radar
Radio telephone
Standard trawling winches and gear

In addition, several smaller boats are used for inshore work.

**Availability of Facilities for Use by Non-Organizational Individuals:** Available only under special circumstances

**Individuals to Contact for Use of Facilities:** David H. G. Gould, Supervisor

**Publications:** The Georgia Game and Fish Commission Contribution Series consists of reports of the Commission's research.

**Reference Material Available:** Limited laboratory library, good personal library material

**Georgia State Game & Fish Commission**
**Coastal Fisheries R/V ANNA**

*Photo courtesy of Georgia Game and Fish Commission*

## GEORGIA STATE WATER QUALITY CONTROL BOARD

**STATE HEALTH BUILDING**
**47 TRINITY AVENUE, S. W.**
**ATLANTA, GEORGIA 30334**

**Specific Division:** Not applicable

**Senior Official:** R. S. Howard, Jr., Executive Secretary

**Scientific Staff:** 2 Biologists, 1 Geologist, 16 Engineers, 3 Chemists, 4 Technicians, 4 Sanitarians

**Major Interests:** Wastewater treatment and control

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies, Surface and sub-surface water quality

**Primary Services:** Data collection, Compilation and statistical analysis, Planning and administration

**Financial Sponsorship:** Federal Government, State Government (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** Information not provided

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Water quality reports upon completion of projects

**Reference Material Available:** Information not provided

## ENVIRONMENTAL PROTECTION AGENCY

**COLLEGE STATION ROAD**
**ATHENS, GEORGIA 30601**

### SOUTHEAST WATER LABORATORY

**Senior Official:** David W. Duttweiler, Ph.D., P.E.

**Scientific Staff:** 6 Biologists, 4 Engineers, 13 Chemists, 6 Technicians, 1 Statistician-biology, 2 Soil scientists

**Major Interests:** Water pollution control

**Primary Research Disciplines:** Ecology, Water pollution control

**Primary Services:** Data collection, Data analysis, Compilation and statistical analysis, Planning and administration, Consulting

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** The Southeast Water Laboratory occupies one 12-acre site in the University Research Park in Athens. In addition to standard laboratory equipment, the Laboratory has the following special equipment:

Auto analyzers - Technician
Carbon-hydrogen-nitrogen analyzer
Shallow water isotope current analyzer
Total organic carbon analyzer - Beckman Model 915 with infrared analyzer Model 215A
Aquatic ecosystem simulator
Differential scanning colorimeter - Perkin-Elmer
Centrifuges:
Electronic Nucleonic Model КПС
Explosive proof - International Model EXD
2 International Model K, Size 2
Sorvell Superspeed with continuous flow attachment
Sorvell Superspeed - manual
Automatic chromatogram scanner - Vanguard
Gas Chromatographs:
Aerograph Autoprep with flame ionization detector
Nestler-Faust 850 Prepkromatic with peak selector computer
Perkin-Elmer 811 with dual column and electron capture and flame ionization detectors
Varian Aerograph Model 1432-B
Liquid chromatograph with ultraviolet and differential refractometric detectors DuPont 820
Liquid scintillation counter - Packard Tri-Carb
Automatic gas-flow low background counting system - Nuclear Biospan Model 4318

## Environmental Protection Agency
## Southeast Water Laboratory — Continued

Continuous flow culture chamber equipped with:
4 500 ml. culture chambers
Dissolved oxygen monitoring
Flow regulating devices
Supporting temperature controllers
X-ray diffractometers - Rigaku-Denki Geigerflex with x-ray camera
Infracord - IR 137
Research microscope - Leitz Panphot equipped with:
3¼ x 4¼ box camera
35mm Leica camera
Darkfield attachments
Fluorescence attachments
Phase contrast attachments
Bolex time-lapse photographic equipment
Spectrometers:
Hitachi Perkin-Elmer interfaced with a Perkin-Elmer 900 gas chromatograph
Grating infrared 1 Perkin-Elmer
Nuclear magnetic resonance with time averaging computer - Varian HA-100
Spectrophotometers:
Fluorescence - Hitachi MPF-2A
Atomic absorption - Perkin-Elmer 303
Infrared - Perkin-Elmer
Ultraviolet-visible-near infrared - Perkin-Elmer 450
Programmed recording spectroradiometer - ISCO Model SR
Automatic titrolyzer - Fisher Model 41
A computer to control and process data is anticipated to be added to the laboratory by 1971.

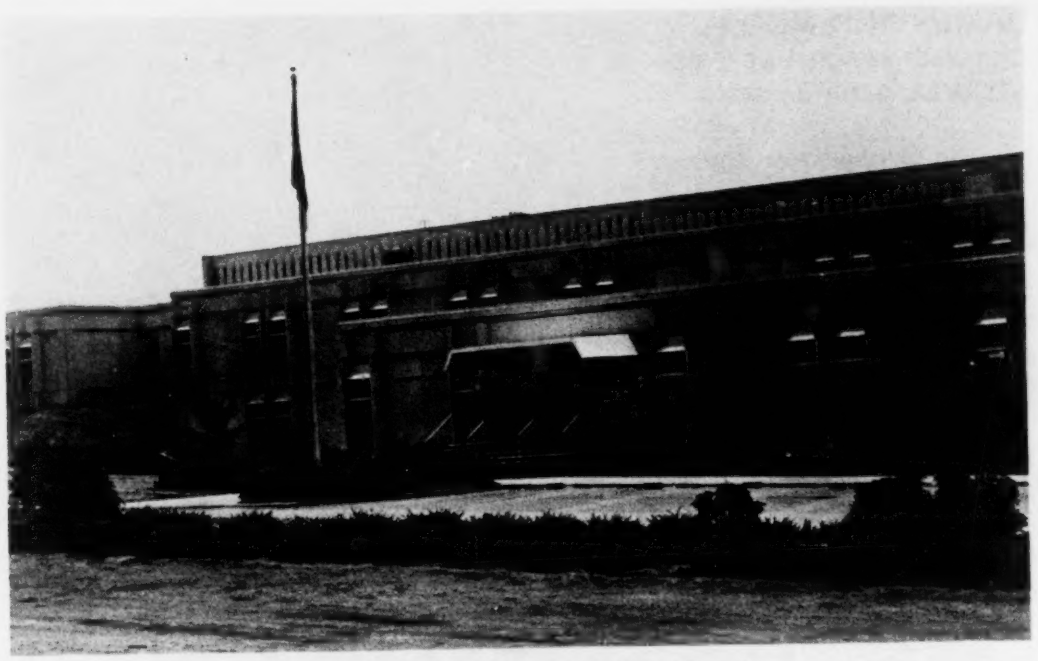
**Research Vessels and Instrumentation:** Small outboard boats only

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Research and technical reports at various intervals, Quarterly activity report.

**Reference Material Available:** The Southeast Water Laboratory Library houses works in chemistry, biology, physiology, oceanography, and hydrology, with in-depth holdings in sanitary engineering. The library also maintains 60 journals which are bound and housed as basic reference material in the disciplines. Federal, State, and municipal documents and publications are shelved in the library with emphasis on holdings for the southeastern states.



**Southeast Water Laboratory, Athens, Georgia.**

*Photo courtesy of*
*Southeast Water Laboratory*

## DAMES AND MOORE

**1314 WEST PEACHTREE STREET, N. E.**
**ATLANTA, GEORGIA 30309**

**Specific Division:** Not applicable

**Senior Official:** Benjamin S. Persons

**Scientific Staff:** 2 Geologists, 5 Engineers, 7 Meteorologists, 2 Hydrographers, 2 Draftsmen, 2 Technicians

**Major Interests:** Applied earth sciences

**Primary Research Disciplines:** Physical oceanography, Air-sea interaction, Ecology, Geological oceanography, Estuarine and marsh studies

**Primary Services:** Equipment design and development, Investigations performed on a contract basis, Consulting

**Financial Sponsorship:** 100% Non-Profit Private Organization

**Shore Laboratory Facilities and Equipment:** Environmental forces testing equipment for earth, ground and surface water, and air; testing includes strength, flow, qualitative and quantitative analysis, geophysical properties, dynamic testing, and temperature sensing.

**Research Vessels and Instrumentation:** Only small craft are owned by this organization; other vessels are leased or rented, as required, for specific projects.

**Availability of Facilities for Use by Non-Organizational Individuals:** Available only under special circumstances

**Individuals to Contact for Use of Facilities:**
Jon Maloney
Dames and Moore
Suite 3500
455 S. Figueroa Street
Los Angeles, California 90017

**Publications:** Monthly engineering bulletin discussing environmental studies presently underway and their results.

**Reference Material Available:** Reports and file data from more than 20,000 separate investigations throughout the world

## LAW AND COMPANY

**P. O. BOX 1558**
**ATLANTA, GEORGIA 30301**

**Specific Division:** Not applicable

**Senior Official:** Dan L. Henry, Director

**Scientific Staff:** 1 Biologist, 6 Chemists

**Major Interests:** Analytical work in several fields

**Primary Research Disciplines:** Not a research laboratory, but an industrial analytical and consulting chemical laboratory

**Primary Services:** Consulting

**Financial Sponsorship:** 100% Industrial Corporation

**Shore Laboratory Facilities and Equipment:**

2 Gas liquid chromatographs
Fat extraction equipment
Bacteriologic laboratory
1½ meter spectrograph
Spectrophotometers:
- Atomic absorption
- Infrared
- Ultra violet
- Visible

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:**

Dan L. Henry
John H. Lynch
William W. McBee

**Publications:** None

**Reference Material Available:** None

## MAYES, SUDDERTH AND ETHEREDGE, INC.

**550 INTERSTATE NORTH PARKWAY**
**ATLANTA, GEORGIA 30339**

**Specific Division:** Not applicable

**Senior Official:** Joe A. Mayes, P.E., Director

**Scientific Staff:** 8 Engineers, 15 Draftsmen, 6 Technicians

**Major Interests:** Pollution control, Water resources

**Primary Research Disciplines:** Estuarine and marsh studies, Water and sewage facilities, Pollution control type studies, Stream analysis

**Primary Services:** Data collection, Compilation and statistical analysis, Planning and administration, Investigation performed on contract basis, Consulting

**Financial Sponsorship:** 70% Federal Government, 20% Industrial Corporation, 10% Private Development Companies

**Shore Laboratory Facilities and Equipment:** Minimum equipment is usually set up at project location

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Non-serial items for clients use only

**Reference Material Available:** Limited material

# NORTH CAROLINA

## CAPE FEAR TECHNICAL INSTITUTE

411 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401

**Specific Division:** Not applicable

**Senior Official:**
M. J. McLeod, President
Capt. Arthur W. Jordan, Coordinator of Marine Technology

**Scientific Staff:** 2 Oceanographers, 2 Biologists, 1 Chemist, 1 Mathematician, 1 Physicist

**Major Interests:** The training of shipboard and laboratory technicians for marine science.

**Primary Research Disciplines:** Physical oceanography, Air-sea interaction, Chemical oceanography, Biological oceanography, Ecology, Geological oceanography, Fisheries, Bathymetry, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Education and training

**Financial Sponsorship:** Federal Government, State Government (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** Classroom laboratories only; equipment includes:
Autoclave
DB spectrophotometer - Beckman
Flame spectrophotometer

**Research Vessels and Instrumentation:** The *S.S. Advance II,* 185 feet, has accommodations for 70 students and instructors. Facilities include a small machine shop, pipefitters shop, and electricians shop, which make it possible to complete almost any repair job that may become necessary. Instrumentation includes:
Annemometer
Recording barometer
2 Bathythermograph booms - adjustable
Four-ton boom for heavy dredging
Nansen bottles with protected and unprotected thermometers
Photoelectric colorimeter
Underwater camera
Automatic chlorinity determiner
Citizens' band system
Bottom corers and samplers

## Cape Fear Technical Institute — Continued

Current meters:
- Acoustic
- Mechanical and electrical
- Self recording
- Underway self recording

Combination depth recorder and fish finder - 850 fms. maximum depth
Automatic direction finder
Visibility discs
Scallop drags
Dredges
Bottom dredges, scoops, and snappers
Dredging equipment for "off-shore" clamming operations
2 Fish pens for icing of fish
Combination jacketed and blast freezer for preservation of fish
Tide gauge
Master gyro system with repeater peloruses
Submarine illuminator
Laboratories:
- Biology
- Chemical
- Sedimentation

Longlining gear for tuna and swordfish
4 Navigation systems - Loran-A and Loran-C
Surface and bottom gill nets
Plankton nets, counters and determinators
3 Plan position indicator scopes
2 Radar sets - 48 mile range
4 Radio receivers
2 Marine radio telephones
Salinometers
Purse and stop seines
Sub-signal sounding machine - 200 fms. maximum depth
2 Brine tanks used for freezing, chilling, and preserving live specimens
Recording thermometers - deep water
Trawls:
- Mid-water for pelagic fish
- Otto for benthic fish
- Shrimp
- Yankee

2 Bathythermograph winches - 6,000 feet of cable each
Deep sea winch - 6,000 feet of 1" wire

The *Undaunted* is a 143 ft. converted U.S. Navy tug powered by twin GM diesel generators which drive twin main propulsion motors into a simple shaft through a reduction gear. The vessel has accommodations for 12 scientists. Instrumentation includes:

4 Aquaria
Automatic pilot

## Cape Fear Technical Institute — Continued

Ten-bottle remote sampler - Niskin
In situ depth, salinity, and temperature recording system
Precision depth recorder
Dew point sensor
Automatic direction finder
Fish finder
Precision graphic recorder
Navigation system - Loran
Newston net
1 m. plankton nets with opening and closing devices
Oxygen titration equipment
Phytoplankton productivity inoculation, incubation, and filtration equipment
Radar
Infrared sea-surface radiometer
Laboratory salinometer
Recording sea-surface salinometer
Nimbus satellite receiver
Sounding equipment - shallow and deep water
Live specimen holding tanks
Recording sea-surface thermometer
Ten-foot and sixteen-foot trawls
Wind speed transmitter
In addition to these vessels, the school also has available:
37 foot cabin cruiser with depth recorder for shallow water
2 26 foot launches for inshore work
2 20 foot launches for inshore work
Numerous small boats for inshore specimen collection

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:**
M. J. McLeod, President
Capt. Arthur W. Jordan, Coordinator of Marine Technology

**Publications:** None

**Reference Material Available:** Standard library references in the marine sciences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**Cape Fear Technical Institute student attaching Nansen bottle to hydrographic wire.**

*Photo courtesy of Cape Fear Technical Institute*



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## DUKE UNIVERSITY MARINE LABORATORY

**BEAUFORT, NORTH CAROLINA 28516**

**Specific Division:** Not applicable

**Senior Official:** John D. Costlow, Jr., Ph.D.

**Scientific Staff:** 1 Oceanographer, 3 Biologists, 1 Geologist, 1 Draftsman, 14 Technicians

**Major Interests:** Marine environment

**Primary Research Disciplines:** Physical oceanography, Chemical oceanography, Biological oceanography, Geological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Planning and administration, Investigations performed on a contract basis

**Financial Sponsorship:** 80% Federal Government, 1% State Government, 19% Non-Profit Private Organization

**Shore Laboratory Facilities and Equipment:** Shore facilities occupy 15 acres on Pivers Island near Beaufort. The facilities include four dormitories, a boat house, a dining hall, a store house, five research buildings, and classroom laboratories. Equipment available here or at the main campus of the University in Durham includes:

Autoclave - American Sterilizer Model 53PM
Aquaria
10 Balances - 1 mg. to 800 g. capacity
Bathythermograph
5 Centrifuges
Constant temperature bath - Hoake
Culture cabinets - Partlow controlled temperature
Demineralizer - Comroe
Densitometer - Photovalt Corporation Model 501A
Electrophoresis equipment for paper and starch block
Hyperbaric chamber
3 Incubators
Kymograph
Microscopes - compound and dissecting
Microtome - A O Spencer
Oscilloscope - Hewlett-Packard Model 122A with type 564 oscilloscope time base unit
Osmometer - biological cryostat
Oxygen analyzer - Beckman Model 777
Oxygen meter - YSI Model 51
Oxygen monitor - YSI Model 53
4 pH meters
Plankton counter - Clarke-Bumpus
Plant growth chamber - Lab-Line

## Duke University Marine Laboratory — Continued

Salinometer - Hytech Model 6220
4 Spectrophotometers
Water supplies - fresh and sea

**Research Vessels and Instrumentation:** The *R/V Eastward,* a 117.5 foot, 276 ton vessel, is powered by a 640 h.p. diesel engine. The vessel accommodates 15 scientists. Instrumentation includes:

Aquarium - constant temperature
Autoclave
Bathythermographs - 60 M and 275 M
Nansen bottles
Underwater cameras - Alpine
Underwater cameras - E.G.G.
Centrifuge - International
High speed centrifuge - Lourdes non-refrigerated
Magnetic compass - White 7"
Phleger corer
Piston corer
Hydraulic crane
Current meters - Hydro Products
Depth-time recorder
Radio direction finder - Raytheon 355R
Secchi disk
Dredges:
Cape Town
Pierce box
Riedal
Rock - Cerame Vivas-Macintyre
Sanders anchor
Precision fathometer recorder
Fluorometer - Turner Model 111
Snapper grab - Alpine
Van Veen grab
Gyrocompass and repeater - Sperry MK XIV
Pitol log with speed and distance indicators
Flow meters
Microscope - compound and dissecting
Navigation system - Loran DX (Loran-A or Loran-C) and Loran Nelco (Loran-A or Loran-C automatic tracking)
Nets
Copenhagen deep
Isaac-Kidd midwater (1 m. and 3 m.)
McGowan-Brown bongo
Plankton - 1½ m. with flow meter
Vacuum oven - Thelco
Submarine photometer
Pinger
High vacuum pump

## Duke University Marine Laboratory — Continued

Radar - Decca type TM 969
Radar - Kelvin Huges type 17/9C
Surface temperature recorder
Salinometer - Hytech
Salinometer - Industrial
Microbiological samplers - Niskin
Water samplers - Niskin large volume
Manual scaler with geiger tube detector - Nuclear-Chicago
Fish finding sonar transceiver and recorder - Simrad Basdic
Sonar transceiver and recorder - Edo 185
D. U. spectrophotometers - Beckman
Oxygen titration kit
Transceiver and depth recorder - Gifft
Sound transceiver and recorder - Edo
Trawls:
Agassiz double beam
Blake
Otter
Small biology
Winches:
Hydrographic - Markey DESH 3 with 22,500 feet of 3/16" wire
Hydrographic - Markey DESH 4 with 30,000 feet of 5/32" wire
Main trawl - New England Trawling Equipment Company with 30,000 feet of ½" non-rotating plow steel wire

**Availability of Facilities for Use by Non-Organizational Individuals:** By special arrangement only

**Individuals to Contact for Use of Facilities:**
John D. Costlow, Jr., Ph.D., Director
Richard Barber, Ph.D., Director, Biological Oceanography
P. B. Huling, Business Manager
Norris Hill, Director of Maintenance
John Newton, Superintendent, Biological Oceanography

**Publications:** Papers and reports are published giving the results of work done wholly or in part at the laboratory.

**Reference Material Available:** Over 3,650 volumes of reference books and journals, 130 current journals, and over 13,000 reprints; graduate students theses are maintained on microfilm.

## EAST CAROLINA UNIVERSITY
## MARINE SCIENCE CENTER

P. O. BOX 758
MANTEO, NORTH CAROLINA 27954

P. O. BOX 2577 (Main Campus)
GREENVILLE, NORTH CAROLINA 27834

**Specific Division:** Not applicable

**Senior Official:** Charles W. O'Rear, Jr., Director

**Scientific Staff:** No permanent staff; faculty members are located on the main campus.

**Major Interests:** Biology and geology of North Carolina sounds and shallow shelf areas

**Primary Research Disciplines:** Biological oceanography, Geological oceanography

**Primary Services:** Data collection, Compilation and statistical analysis, Equipment testing and evaluation, Investigations performed on a contract basis, Consulting

**Financial Sponsorship:** 50% Federal Government, 50% State Government

**Shore Laboratory Facilities and Equipment:** Three laboratories, one for geology, one for biology, and one for analytical instruments are located in a converted school building. All laboratories have air, fresh water, and gas available. No equipment is kept permanently in these laboratories, but equipment is available on loan from the main campus of the University. This equipment includes:

Centrifuges - chemical, high speed refrigerated, and ultra
5 Colorimeters
Coring devices - assorted
Dredges - assorted
Drill - diamond
Magnetic separator
14 Microscopes - research quality
Nets - assorted
4 Plant growth chambers
Seines - assorted
Scuba equipment
Spectrographic equipment - geologic
8 Spectrophotometers
Water samplers - assorted
X-ray equipment - geologic

**Research Vessels and Instrumentation:**

30 foot, gas powered, converted Chesapeake Bay oyster boat
Outboard powered diving barge
2 Small outboard boats

## East Carolina University Marine Science Center – Continued

**Availability of Facilities for Use by Non-Organizational Individuals:** Available on a rental basis

**Individual to Contact for Use of Facilities:** Charles W. O'Rear, Jr., Director

**Publications:** Non-serial publications only

**Reference Material Available:** 14,000 volumes on biological topics, 3,523 volumes of bound biological periodicals, 1,583 microfilmed biological periodicals

## NORTH CAROLINA STATE UNIVERSITY
## PAMLICO MARINE LABORATORY
**AURORA, NORTH CAROLINA 27806**

**Specific Division:** Not applicable

**Senior Official:** B. J. Copeland, Ph.D., Director

**Scientific Staff:** 1 Chemist, 1 Ecologist, 1 Estuarine ecologist

**Major Interests:** The effects of environmental stresses on estuarine ecology

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Planning and administration, Investigations performed on a contract basis, Compilation and statistical analysis, Consulting

**Financial Sponsorship:** 60% Federal Government, 20% State Government, 20% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** The following equipment is available either at the Marine Lab or at the main campus of the University in Raleigh:

Analyzers:
- Amino acid
- 2 Gas - Beckman IR
- Multichannel
- Non-dispersive infrared 95800X - Beckman IR-215

10 Aquaria
Colorimeter
Magnetic tape 360/75 computer
Gas phase counter
Gas chromatograph
Electrometer
Food freeze dryer
Longline gear
190 $ft^3$ hyperbaric facility
2 Constant temperature incubators
2 BOD constant temperature control incubators
Current meter
Microtome
Plankton nets
2 pH meters
Photometer
2 RS 5 salinometers
Benthic sampler - Van Veen
6 Effluent samplers
Infrared spectrometer
Mass spectrometer

## North Carolina State University Pamlico Marine Laboratory – Continued

Spectrophotometers:
- Atomic absorption
- Beckman DB
- Beckman DV II

Trawls

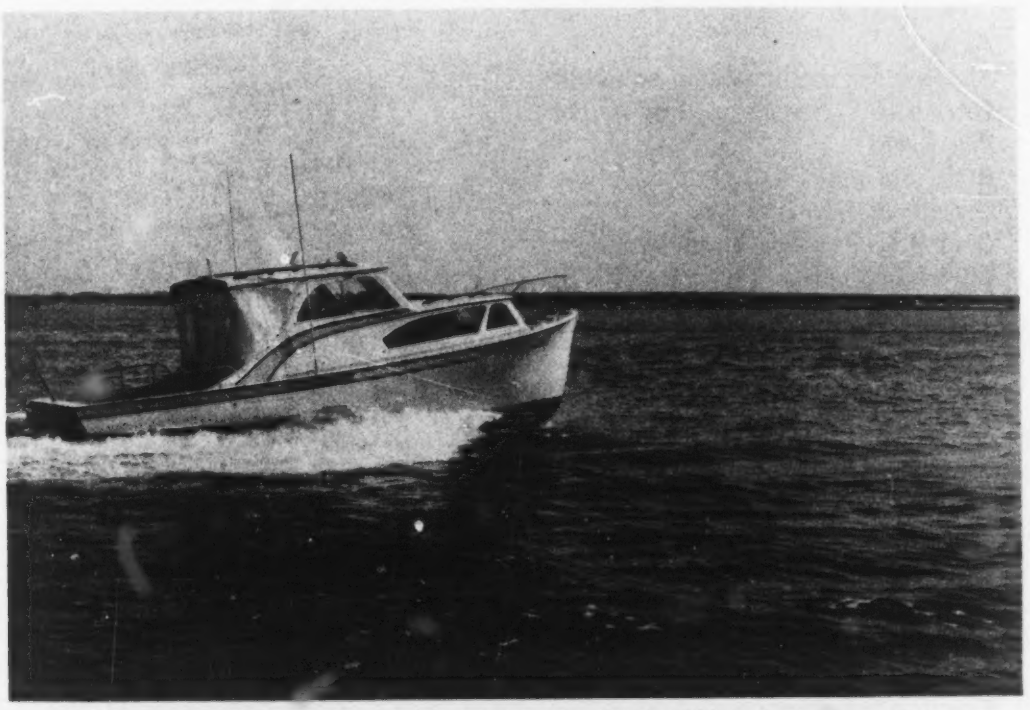
**Research Vessels and Instrumentation:** A 30 foot gasoline sports fisherman which has accommodations for four.

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** B. J. Copeland, Ph.D., Director

**Publications:** Reports relating to results of research carried out at the Laboratory

**Reference Material Available:** The library of the University contains over 400,000 volumes, approximately half of which are devoted to the physical and biological sciences and engineering and technology



**30 foot cruiser operated by Pamlico Marine Laboratory.**

***Photo courtesy of Pamlico Marine Laboratory***

## UNIVERSITY OF NORTH CAROLINA
**CHAPEL HILL, NORTH CAROLINA 27514**

### BOTANY DEPARTMENT

**Senior Official:** Victor A. Greulach, Ph.D., Chairman

**Scientific Staff:** 4 Biologists

**Major Interests:** Marine phycology, Marine mycology, Ecology

**Primary Research Disciplines:** Biological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Investigations provided only for parent organization, Consulting

**Financial Sponsorship:** 30% Federal Government, 70% State Government

**Shore Laboratory Facilities and Equipment:** An itemized list of equipment used in each department involved in marine research studies at the University was not provided. The following is a list of equipment available in various departments of the University for use in marine research:

Aquaria
Flowing salt water system aquarium
Nitrate and phosphate autoanalyzer
Autoclave
BOD indicator
Organic carbon analyzer
Centrifuge - constant temperature
Chromatographs:
- Gas - Aerograph 1250
- Gas - Model A-90-P
- Gas - Hy-Fi Model 610-D

Walk in cold storage room
8 Small constant temperature boxes
5 Constant temperature rooms
Isotope-proportional counter
Scintillation counter
Walk in culture room
6 Walk in controlled environmental boxes
7 Controlled environmental units
Fluorimeter
Fraction collector
3 Sheer growth chambers
IBM system 360/Model 40 computer with core storage of 256 K.
- Associated equipment includes:
  - 2540 Card reader - card punch
  - 2040 Central processing unit
  - 2250 Display unit

**University of North Carolina**
**Botany Department – Continued**

15 - 029 Keypunch machines
2 -2415 Magnetic tape units
1403 Printer
Cal-Comp plotter
2314 Direct access storage facility
2701 Teleprocessing unit which connects the Model 40 computer to the Model 75 computer at Research Triangle Park

Radiobiology laboratory
Constant light-temperature experimental unit
Fluorescence microscope - Zeiss
Sonar gear
Spectrophotometer - Zeiss PMQ11
Flame spectrophotometer
Recording spectrophotometer - Carey 14
Telethermometer

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Information not provided

**Reference Material Available:** A library of 18,315 volumes

## University of North Carolina – Continued

### DEPARTMENT OF ENVIRONMENTAL SCIENCES AND ENGINEERING

**Senior Official:** D. A. Okum, Sc.D., Director

**Scientific Staff:** 2 Oceanographers, 3 Biologists, 2 Chemists, 1 Engineer

**Major Interests:** Environmental pollution, air and water

**Primary Research Disciplines:** Physical oceanography, Air-sea interaction, Chemical oceanography, Biological oceanography, Ecology, Estuarine and marsh studies

**Primary Services:** Investigations performed on a contract basis.

**Financial Sponsorship:** 80% Federal Government, 20% State Government

**Shore Laboratory Facilities and Equipment:** This information is provided under this heading in the description of the Botany Department of the University of North Carolina.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** *Environmental Science and Engineering Notes,* a quarterly research newsletter

**Reference Material Available:** A small library of approximately 50 volumes.



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## University of North Carolina — Continued

### DEPARTMENT OF GEOLOGY

**Senior Official:** John M. Dennison, Ph.D., Chairman

**Scientific Staff:** 1 Oceanographer, 12 Geologists, 1 Technician

**Major Interests:** Geology

**Primary Research Disciplines:** Physical oceanography, Geological oceanography, Estuarine and marsh studies, Geology

**Primary Services:** Not applicable

**Financial Sponsorship:** 60% Federal Government, 40% State Government

**Shore Laboratory Facilities and Equipment:** A sedimentation laboratory with standard equipment, 1 Dymec quartz thermometer and miscellaneous electronic measuring equipment

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available by special agreement

**Individuals to Contact for Use of Facilities:** John M. Dennison, Ph.D., Chairman

**Publications:** None

**Reference Material Available:** A 24,000 volume geology library

## WRIGHTSVILLE MARINE BIO-MEDICAL LABORATORY

**7205 WRIGHTSVILLE AVENUE**
**WILMINGTON, NORTH CAROLINA 28401**

**Specific Division:** Not applicable

**Senior Official:** Ralph W. Brauer, Ph.D., Scientific Director

**Scientific Staff:** 3 Biologists, 2 Physiologists

**Major Interests:** Environmental physiology, Physiology of man and high pressure vertebrates in marine environments, Physiological effects of high pressure

**Primary Research Disciplines:** Biological oceanography, Ecology, Marine environmental physiology

**Primary Services:** Equipment design and development, Consulting

**Financial Sponsorship:** Federal Government, Non-Profit Private Organization (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** These facilities consist of a series of buildings containing approximately 6,000 sq. ft. of laboratory space almost equally divided between differentiated laboratory space and wet laboratories close to salt water and the Inland Waterway. Included are basic general facilities for biochemical and physiological investigations, a surgical suite, x-ray facilities (diagnostic unit and a 280 kv therapeutic source for radiobiological experimentation) along with a small primate colony. Special facilities developed here enable the study of mammals up to the size of baboons in gaseous environments up to pressures of 200 atm. All animal chambers are equipped with internal recirculating life support systems and are used for compression-decompression experiments of all species in the selected environment. All chambers are also fitted with electrophysiological information leads permitting observations of EKG, EEG, and respiratory rates, as well as electrical and photostimulation as desired. Oxygen, carbon dioxide, and temperature are routinely monitored in all systems.

The Laboratory also maintains a well equipped shop for making the components of the high pressure systems, except the heaviest metal forgings.

An electrical maintenance shop is capable of making simple circulating elements and control systems and maintains all electrical and electronic controlled animals.

Several small volume aluminum high pressure chambers are available for the study of high pressure effects such as protein-small molecule interactions, respiration rates in very small laboratory animals at high pressure, and various temperatures and pressure response in certain invertebrate forms.

The Laboratory also has a 1,000 atm. hydrostatic simulator of approximately 1 $ft.^3$ test volume, equipped with window, electrical passages, light sources, and hull penetrations which permit circulating fluids through a compartment separated from the hydraulic fluid.

## Wrightsville Marine Bio-Medical Laboratory – Continued

Gas analytical equipment at the Laboratory include:

- Infrared $CO_2$ analyzer
- Paramagnetic oxygen analyzer
- Various oxygen electrodes
- Gas chromatographs
- Mass spectrograph

**Research Vessels and Instrumentation:** The *R/V Symbiont,* a 40 ft. diving support vessel with twin 115 h.p. engines and accommodations for six; instrumentation includes:

- 75 watt radio
- Depth recorder
- Diving compressor
- Desco mask and hoses

**Availability of Facilities for Use by Non-Organizational Individuals:** Space is kept available for visiting scientists on a "space available" basis. There is also space for trailer parking and for visiting staff.

**Individuals to Contact for Use of Facilities:** Ralph W. Brauer, Ph.D., Scientific Director

**Publications:** Research reports upon completion of projects along with occasional contributions to technical publications

**Reference Material Available:** Approximately 10,000 volumes with 60 current serial publications; areas of concentration are physics, chemistry and physiology of high pressures, diving physiology and techniques, experimental neurology, general reference section to cover allied topics and physiography, anthropology, and pertinent general information on various geographical regions of special interest to the Laboratory.

## CARTERET COUNTY PUBLIC SCHOOLS

**BEAUFORT, NORTH CAROLINA 28516**

### REGIONAL MARINE SCIENCE PROJECT

**Senior Official:** Will Hon, Director

**Scientific Staff:** 4 Biologists

**Major Interests:** Marine science education with field trip emphasis

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies, Marine science education

**Primary Services:** Teacher training, Curriculum materials, General publications, Field trip guidance, Instruction

**Financial Sponsorship:** Federal Government, State Government, County Government (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** In addition to the classrooms of the county school system, the facilities of Duke University, the University of North Carolina, and the National Marine Fisheries Service at Beaufort are utilized.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** Will Hon, Director

**Publications:** Publications concerning curriculum development in the marine sciences for grades 4-10 and two advanced biology courses

**Reference Material Available:** 300 volumes of marine science books

## NORTH CAROLINA DEPARTMENT OF CONSERVATION AND DEVELOPMENT

P. O. BOX 27687
RALEIGH, NORTH CAROLINA 27611

P. O. BOX 338
MOREHEAD CITY, NORTH CAROLINA 28557

### DIVISION OF COMMERCIAL AND SPORTS FISHERIES

**Senior Official:** T. L. Linton, Ph.D., Fisheries Commissioner

**Scientific Staff:** 9 Biologists, 1 Draftsman

**Major Interests:** Marine fisheries resources

**Primary Research Disciplines:** Fisheries, Estuarine and marsh studies

**Primary Services:** Investigations for parent organization only

**Financial Sponsorship:** 25% Federal Government, 75% State Government

**Shore Laboratory Facilities and Equipment:** None at the present time, but a new building with laboratory facilities is expected to be completed by 1972

**Research Vessels and Instrumentation:** The *R/V Dan Moore,* an 85 foot, 106 ton steel stern trawler powered by a 422 h.p. engine; the vessel has accommodations for two scientists. Instrumentation includes:

Automatic pilot
Cooler and freezer - walk in
Fathometer
Ice machine - salt water
Laboratory with fresh and salt water systems
Navigation system - Loran
Outriggers - for double rigged fish or shrimp trawling
Radar
Radio
Sonar
Trynet winch

**Availability of Facilities for Use by Non-Organizational Individuals:** Available only on charter

**Individual to Contact for Use of Facilities:** T. L. Linton, Ph.D., Commissioner of Fisheries

**Publications:** Special Scientific Reports, Nos. 1 through 20

**Reference Material Available:** Very limited; mostly private collections

**The North Carolina Division of Commercial and Sports Fisheries exploratory fishing vessel, Dan Moore.**

*Photo courtesy of North Carolina Division of Commercial and Sports Fisheries*



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## U.S. DEPARTMENT OF THE ARMY
## U.S. ARMY ENGINEER DISTRICT, WILMINGTON

**FEDERAL BUILDING**
**WILMINGTON, NORTH CAROLINA 28401**

**Specific Division:** Not applicable

**Senior Official:** Col. Paul S. Denison, District Engineer

**Scientific Staff:** 4 Engineers, 4 Draftsmen, 2 Technicians

**Major Interests:** Shore processes, Tidal flow and circulation patterns

**Primary Research Disciplines:** Estuarine and marsh studies, Shore processes

**Primary Services:** Data collection, Planning and administration, Investigations provided only for parent organization

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** Special equipment includes an IBM 2780 computer. Terminal and accessories are connected to the Research Triangle Park Computer Center.

**Research Vessels and Instrumentation:** Two 45 foot twin diesel survey launches; instrumentation includes:

5 Current meters
4 Fathometers
4 Tide gauges
2 Wave gauges
Sediment sampler
Sounding sled for surf zone measurements

In addition there are two 35 foot amphibious vehicles.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Non-serial publications related to shore erosion and hurricane protection

**Reference Material Available:** *Beach Erosion Board Technical Memorandums, Nos. 1 through 140,* U.S. Army Coastal Engineering Research Center, *Technical Memorandums, Nos. 1 through 29,* U.S. Army Coastal Engineering Research Center, *Miscellaneous Papers Nos. 2-64 through 1-70, Coastal Engineering Conference Proceedings,* 1951 through 1968

## U.S. DEPARTMENT OF THE INTERIOR
## OFFICE OF SALINE WATER
## WRIGHTSVILLE BEACH TEST FACILITY

**P. O. BOX 597**
**WRIGHTSVILLE BEACH, NORTH CAROLINA 28480**

**Sepcific Division:** Not applicable

**Senior Official:** Wilfred J. Hahn, Manager

**Scientific Staff:** 2 Engineers, 1 Chemist, 2 Technicians

**Major Interests:** Sea water conversion

**Primary Research Disciplines:** Chemical oceanography, Desalting technology

**Primary Services:** Data collection, Data analysis, Equipment design and development, Equipment testing and evaluation

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** 1600 square feet of laboratory space; in addition to standard laboratory equipment, the following special equipment is available:

Gas chromatograph
Atomic absorption spectrophotometer
D. U. spectrophotometer

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Saline water conversion reports

**Reference Material Available:** Office of Saline Water Research and Development Reports

## COASTAL ZONE RESEARCH CORPORATION

**4009 OLEANDER DRIVE**
**P. O. BOX 848**
**WILMINGTON, NORTH CAROLINA 28401**

**Specific Division:** Not applicable

**Senior Official:** David A. Adams, Ph.D., President

**Scientific Staff:** 1 Oceanographer, 2 Biologists, 1 Ecologist, 1 Economist

**Major Interests:** Coastal natural resource management, Aquaculture development (molluscs)

**Primary Research Disciplines:** Biological oceanography, Ecology, Fisheries, Estuarine and marsh studies, Pollution effects, Pollution control and abatement

**Primary Services:** Data collection, Data analysis, Equipment design and development, Equipment testing and evaluation, Investigations performed on a contract basis, Compilation and statistical analysis, Consulting, Aquaculture projects

**Financial Sponsorship:** 42.3% Federal Government, 39.1% State Government, 9.8% Industrial Corporation, 8.8% Non-Profit Private Corporation

**Shore Laboratory Facilities and Equipment:** A mollusc hatchery with sea water system, outside raceways, and standard laboratory equipment

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** Moderate library holdings in coastal resource management, government operations, aquaculture, and water quality management

## THE INTERNATIONAL NICKEL COMPANY, INC.

**P. O. BOX 656**
**WRIGHTSVILLE BEACH, NORTH CAROLINA 28480**

### THE FRANCIS L. LAQUE CORROSION LABORATORY

**Senior Official:** W. W. Kirk, Manager

**Scientific Staff:** 5 Engineers, 8 Technicians

**Major Interests:** Marine corrosion

**Primary Research Disciplines:** Marine corrosion

**Primary Services:** Testing and evaluation for industry

**Financial Sponsorship:** 5% Federal Government, 95% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** A large wharf area is located with the main buildings on Harbor Island and is used for long term exposure of several thousand test panels in natural seawater. Everything associated with the wharf, including the piles for its support, is under test. A wide range of seawater temperatures, a long growing season for marine organisms, a constant supply of full strength, unpolluted raw seawater and protection from storms combine to make the wharf's location excellent for seawater corrosion studies.

At Kure Beach, 18 miles south of the laboratory, four acres of atmospheric test lots are located where over 40,000 specimens are exposed to salt air, ocean spray, and the weather. Two of these lots face the ocean and are an average of 80 feet from the normal mean tide level. Another lot is located 800 feet from the ocean.

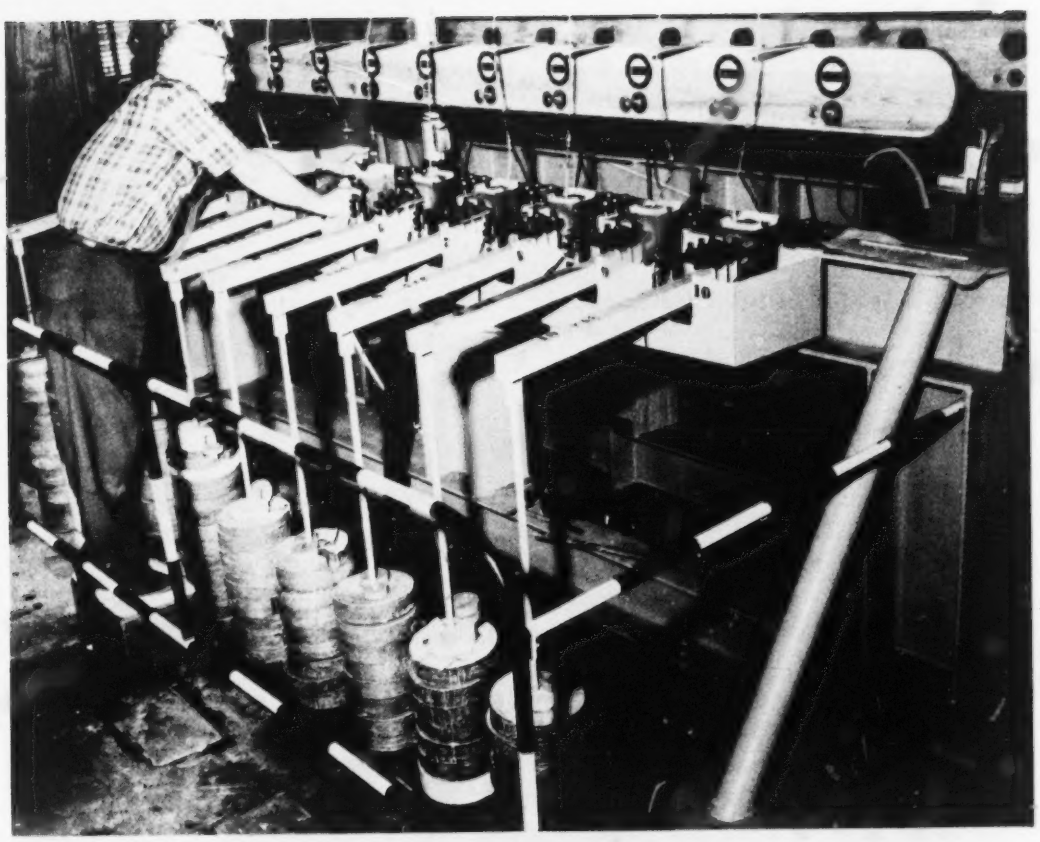
**Research Vessles and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** W. W. Kirk, Manager

**Publications:** None

**Reference Material Available:** A detailed report is on file for every specimen tested at the laboratory. In addition, a technical library pertaining to marine corrosion and related topics is maintained.



**Stress-corrosion cracking test apparatus at the Francis L. LaQue Corrosion Laboratory**

*Photo courtesy of The International Nickel Company, Inc.*

## MARINE CHEMURGICS, INC.

**RFD 1, P. O. BOX 99 (OCEAN)**
**NEWPORT, NORTH CAROLINA 28570**

**Specific Division:** Not applicable

**Senior Official:** T. M. Miller, Director

**Scientific Staff:** 2 Chemists, 1 Engineer, 2 Technicians

**Major Interests:** Fishery technology

**Primary Research Disciplines:** Fisheries

**Primary Services:** Data collection, Equipment design and development, Equipment testing and evaluation, Planning and administration, Investigation performed on a fee basis, Consulting

**Financial Sponsorship:** 100% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** Three buildings located between two inlets just off the Inland Waterway; in addition to offices, these buildings house a library, analytical laboratory, and product development laboratory. Other facilities include a pilot plant for processing and packing semi-commercial quantities of seafoods for market tests. Additional office space for oceanographic enterprises is available.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Certain facilities are available for lease.

**Individuals to Contact for Use of Facilities:** T. M. Miller, Director

**Publications:** Technical brochures and publications dealing with fish meal, oil and solubles, seafoods, antioxidants, and preservatives are available upon request.

**Reference Material Available:** A small library contains references in the field of fishery research. Included is a complete file of Bureau of Commercial Fisheries abstracts and abstracts issued by FAO in Rome, Italy. Also included is a diversified information file on food technology, feeding practices, nutrition, and fats and oils technology.

**Laboratories and facilities of Marine Chemurgics, Inc.**

*Photo courtesy of Marine Chemurgics, Inc.*

## MARITIME SERVICES, INC.

P. O. BOX 335
ELIZABETH CITY, NORTH CAROLINA 27909

**Specific Division:** Not applicable

**Senior Official:** P. A. Johnson, Director

**Scientific Staff:** 3 Engineers, 3 Technicians

**Major Interests:** Prototype testing, Construction and evaluation

**Primary Research Disciplines:** Oceanographic engineering, Equipment development, Design and construction of pollution control equipment

**Primary Services:** Equipment design and development, Equipment testing and evaluation, Investigations performed on a contract basis, Consulting

**Financial Sponsorship:** Industrial Corporation

**Shore Laboratory Facilities and Equipment:** No laboratories; facilities consist of ship and equipment construction and repair yard with docks, railways, and shops located on the Pasquatank River and Inland Waterway.

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** J. F. Sanders

**Publications:** None

**Reference Material Available:** A standard engineering library with emphasis on ship design and ocean engineering

## THE MOGUL CORPORATION

**1201 SOUTH GRAHAM STREET**
**P. O. BOX 1267**
**CHARLOTTE, NORTH CAROLINA 28201**

**Specific Division:** Not applicable

**Senior Official:** W. H. Shinn, Divisional Manager

**Scientific Staff:** 1 Biologist, 2 Chemists, 2 Technicians

**Major Interests:** Water pollution control

**Primary Research Disciplines:** Water treatment, Pollution research

**Primary Services:** Data analysis, Investigations performed for parent organization only, Data supplied to engineers for a fee depending upon the situation

**Financial Sponsorship:** Industrial Corporation

**Shore Laboratory Facilities and Equipment:** Information not provided

**Research Vessels and Instrumentation:** Information not provided

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Information not provided

**Reference Material Available:** Information not provided

## RESEARCH TRIANGLE INSTITUTE

P. O. BOX 12194
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

### ENGINEERING AND ENVIRONMENTAL SCIENCES DIVISION

**Senior Official:**
R. M. Burger, Ph.D., Director
J. R. Smith

**Scientific Staff:** 6 Meteorologists, 4 Oceanographers, 1 Geologist, 20 Engineers, 2 Chemists, 1 Mathematician, 3 Physicists

**Major Interests:** Air-sea interactions, Air chemistry, Ocean shelf and estuarine investigations, General oceanography, Geophysical investigations

**Primary Research Disciplines:** Physical oceanography, Air-sea interaction, Chemical oceanography, Biological oceanography, Geological oceanography, Bathymetry, Estuarine and marsh studies, Satellite oceanography

**Primary Services:** Data collection, Data analysis, Equipment design and development, Equipment testing and evaluation, Planning and administration, Investigations performed on a contract basis, Compilation and statistical analysis, Consulting

**Financial Sponsorship:** 95% Federal Government, 5% Industrial Corporation

**Shore Laboratory Facilities and Equipment:**
Sensor development laboratory
Instrumentation laboratory
Digital data acquisition
Oceanographic instrumentation

**Research Vessels and Instrumentation:** Research vessels operated by Cape Fear Technical Institute, Wilmington, North Carolina are employed.

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** J. R. Smith

**Publications:** Contract reports and occasional papers in professional journals.

**Reference Material Available:** The library facilities of Duke University, North Carolina State University, and the University of North Carolina at Chapel Hill

## SOUTHERN TESTING AND RESEARCH LABORATORIES, INC.

**607 PARK AVENUE**
**WILSON, NORTH CAROLINA 27893**

**Specific Division:** Not applicable

**Senior Official:** W. A. Bridgers, Sr., President

**Scientific Staff:** 2 Biologists, 4 Chemists, 7 Technicians, 2 Food Scientists

**Major Interests:** Biological water resources, Seafoods

**Primary Research Disciplines:** Ecology, Fisheries, Water treatment and waste disposal

**Primary Services:** Equipment testing and evaluation, Investigations performed on a contract basis

**Financial Sponsorship:** 100% Industrial Corporation

**Shore Laboratory Facilities and Equipment:** The company's laboratories contain the following equipment:

Gas chromatograph
Flame photometer
Polaragraph
Atomic absorption spectrophotometer
Infrared spectrophotometer
Ultra-violet spectrophotometer
Visible spectrophotometer
Laboconio nitrogen laboratory for protein and fiber analysis

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:**

W. A. Bridgers, Sr., President
Herbert Grimes, Bacteriologist
Billy Ray Price, Chemist

**Publications:** None

**Reference Material Available:** Over 800 books and subscriptions to 35 journals related to agricultural products, biology, and food science

# SOUTH CAROLINA

## THE CITADEL
**CHARLESTON, SOUTH CAROLINA 29409**

### DEPARTMENT OF BIOLOGY

**Senior Official:** Robert Baldwin, Ph.D., Acting Director

**Scientific Staff:** 7 Biologists

**Major Interests:** Biological studies of coastal and estuarine areas

**Primary Research Disciplines:** Marine biology, Ecology

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** Not indicated

**Shore Laboratory Facilities and Equipment:** A new biology building was completed in December 1970. The building houses faculty offices, a reading room, a lecture theater, classrooms, a greenhouse, an animal house, an aquarium room, and eight laboratories. Special equpment available in the laboratories includes:

2 Top loading balances - Sartorius #2254
5 Variable temperature cabinets - Lab-Line "Ambic-Lo"
Colony counter - AO Spencer
48 Illuminators - American Optical
24 Micro lampettes
Portable microprojector - Bausch and Lomb
Microscopes:
Camera attachment and accessories for Leitz Ortholux
24 Compound - American Optical
24 Compound with three objectives and 10x eyepieces - Bausch and Lomb
24 Compound with two objectives and 7x, 10x or 12x eyepieces - Bausch and Lomb
12 Compound - Graf-Apsco Model GKM4W
72 Dissecting - American Optical
24 Dissecting with two objectives and two 12x eyepieces
Dissecting - Wild #10,000
Phase contrast accessories for Leitz Ortholux
Microtomes:
AO Model 820 with #826 knife holder
Knife sharpener - AO Spencer
Precision rotary - AO Spencer
Heavy duty sliding - AO Spencer
Dual beam oscilloscope - Tektronics 502A
Drying oven with blower - Lab-Line
2 pH meters - Corning Model 5

## The Citadel Department of Biology — Continued

pH meter - Photovolt Model 126A
2 Physiology kits - Phipps and Bird Model PK-3
Physiology kit - PK-3
Low level preamplifier - Tektronics type 122
Respirometer - Gilson Model G8
Steam pressure portable sterilizer
Tissue float bath - Lab-Line C/S and "Lo-Boy"
Square wave simulator

**Research Vessels and Instrumentation:** The Citadel maintains a 45 foot cabin cruiser, a work boat, 17 small sailboats, and 5 outboard motor boats. Facilities are available for dockage, storage, a marine railway, and repair and upkeep of small boats.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** The library of the Citadel contains over 130,000 volumes and subscribes to over 700 periodicals.

**DEPARTMENT OF CHEMISTRY AND GEOLOGY**

**Senior Official:** Joseph R. Wilkinson, Ph.D., Head

**Scientific Staff:** 12 Geochemists

**Major Interests:** Marine geochemistry

**Primary Research Disciplines:** Chemistry, Geochemistry, Geology, Mineralogy

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** Not indicated

**Shore Facilities and Equipment:** A new chemistry-geology building was completed in early 1970. The building contains faculty offices, a lecture theater, conference rooms, classrooms, and laboratories, along with the following equipment:

- Analytical balances - Mettler
- Constant temperature bath
- Spectronic-20 colorimeters
- Electrophotometers
- Fraction collector
- Vapor phase gas chromatograph
- Vacuum oven
- X-Y recorder
- Refractometer
- Gamma ray scintillation spectrometer
- Spectrophotometers:
  - Atomic absorption
  - Infrared
  - Visual-UV
- Differential thermal analyzer

**Research Vessels and Instrumentation:** For this information, refer to The Citadel, Department of Biology.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** For this information, refer to The Citadel, Department of Biology.

## The Citadel — Continued

### CIVIL ENGINEERING DEPARTMENT

**Senior Official:** Loring K. Himelright, P.E., Head

**Scientific Staff:** 9 Civil Engineers

**Major Interests:** Civil engineering

**Primary Research Disciplines:** Civil engineering

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** Not indicated

**Shore Laboratory Facilities and Equipment:** Classrooms, drafting rooms, and laboratories necessary to carry out civil engineering instruction

**Research Vessels and Instrumentation:** For this information, refer to The Citadel, Department of Biology.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** For this information, refer to The Citadel, Department of Biology.

## CLEMSON UNIVERSITY
**CLEMSON, SOUTH CAROLINA 29631**

**WATER RESOURCES RESEARCH INSTITUTE**

**Senior Official:** A. W. Snell, Ph.D., Chairman of the Directorate

**Scientific Staff:** Biologists, Geologists, Engineers, Draftsmen, Chemists, Mathematicians, Physicists, Technicians (Numbers not specified)

**Major Interests:** All phases of water resources research

**Primary Research Disciplines:** Biological oceanography, Ecology, Fisheries, Estuarine and marsh studies, Economics

**Primary Services:** Data analysis, Investigations performed on a contract basis

**Financial Sponsorship:** 50% Federal Government, 50% State Government

**Shore Laboratory Facilities and Equipment:** A laboratory will be constructed in the near future at Clemson University on Hartwell Lake

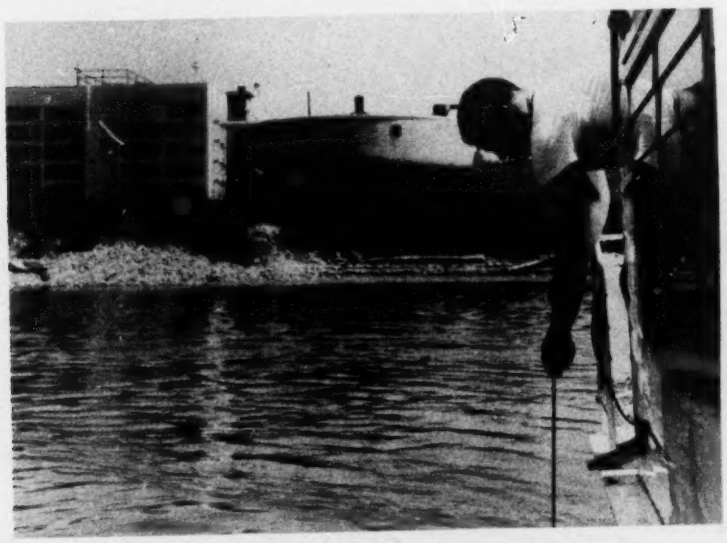
**Research Vessels and Instrumentation:** One 22 ft. houseboat and one small boat for sampling small areas of Hartwell Lake.

**Availability of Facilities for Use by Non-Organizational Individuals:** On special basis only

**Individuals to Contact for Use of Facilities:** A. R. Abernathy, Ph.D.

**Publications:** Reports are published upon completion of investigations

**Reference Material Available:** The Robert Muldron Cooper Library contains 450,000 volumes and is heavily oriented toward science and technology



**Hartwell Lake and waste treatment facility, Clemson University, Clemson, South Carolina.**

***Photo courtesy of Clemson University***

## MEDICAL UNIVERSITY OF SOUTH CAROLINA

**80 BARRE STREET**
**CHARLESTON, SOUTH CAROLINA 29401**

**Specific Division:** Not applicable

**Senior Official:** William M. McCord, Ph.D., M.D., President

**Scientific Staff:** Biologists, Technicians (Numbers not specified)

**Major Interests:** Effects of pesticides and pollution on marine algae

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies

**Primary Services:** Data collection, Investigations performed on a contract basis, Consulting

**Financial Sponsorship:** Federal Government, State Government (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** In addition to standard equipment, the laboratories at the University contain:

Amino acid analyzers
Autoclave
Centrifuges
Gas chromatograph
Incubators
Microscope with automatic photographic attachment - Nikon
Scintillation counter
Spectrophotometers

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** None

**Reference Material Available:** A library containing over 40,000 volumes of which over 15,000 volumes pertain to biomedical sciences

## UNIVERSITY OF SOUTH CAROLINA

**COLUMBIA, SOUTH CAROLINA 29208**

**BELLE W. BARUCH INSTITUTE FOR COASTAL AND LITTORAL SCIENCES**

**Senior Official:** F. John Vernberg, Ph.D., Director

**Scientific Staff:** 4 Oceanographers, 10 Biologists, 5 Geologists, 1 Engineer

**Major Interests:** Research and management of the coastal regions

**Primary Research Disciplines:** Biological oceanography, Ecology, Geological oceanography, Estuarine and marsh studies, Aquaculture

**Primary Services:** Data collection, Equipment design and development, Planning and administration, Consulting, Investigations performed on a contract basis

**Financial Sponsorship:** 11.3% Federal Government, 1.3% State Government, 37.5% Non-Profit Private Organization, 49.9% Other unspecified sources

**Shore Laboratory Facilities and Equipment:** Limited laboratory facilities for marine studies are available at the Baruch Plantation at Georgetown, South Carolina. Expanded facilities are planned.

On the campus of the University of South Carolina in Columbia, laboratories are located in the Departments of Geology and Biology and the Baruch Institute. Equipment includes:

Atomic absorption unit
Gas liquid chromatograph
Infrared gas analyzer
Electron microscope
Liquid scintillation counter
Mass spectrometer
Spectrophotometer
Constant temperature equipment

**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** F. John Vernberg, Ph.D., Director

**Publications:** None at the present time; the Institute is only one year old and plans to issue annually its collected reprints on an exchange basis.

**Reference Material Available:** The University library system contains a total of over 700,000 volumes including over 56,000 volumes pertaining to the physical sciences, over 35,000 volumes pertaining to the biomedical sciences, and over 42,000 volumes pertaining to engineering and technology.

## SOUTH CAROLINA WATER RESOURCES COMMISSION

**2414 BULL STREET**
**COLUMBIA, SOUTH CAROLINA 29201**

**Specific Division:** Not applicable

**Senior Official:** Clair P. Guess, Jr., Director

**Scientific Staff:** 1 Biologist, 1 Geologist, 1 Engineer, 1 Draftsman-Technician

**Major Interests:** Coastal zone management and planning for the quality and quantity aspects of surface and ground water management

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies, Ground and surface water quality and quantity evaluations

**Primary Services:** Data collection, Data analysis, Planning and administration, Consulting

**Financial Sponsorship:** 50% Federal Government, 50% State Government

**Shore Laboratory Facilities and Equipment:** The Water Resources Commission, through cooperative agreements and contracts, has access to all State and Federal laboratories in support of its research and field investigations.

**Research Vessels and Instrumentation:** The same cooperative agreements and contracts concerning the shore laboratories apply to research vessels and instrumentation.

**Availability of Facilities for Use by Non-Organizational Individuals:** Not applicable

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** The South Carolina Water Resources Commission's Annual Reports, Annual Governor's Conference Proceedings Reports, Legislative Water Resources Study Committee Report, Special project reports, investigation studies, and formal recommendations

**Reference Material Available:** Geological information dealing with quality and quantity aspects of ground and surface waters. Ecological planning and management information dealing with coastal zone information

## SOUTH CAROLINA WILDLIFE RESOURCES DEPARTMENT

**2024 MAYBANK HIGHWAY**
**CHARLESTON, SOUTH CAROLINA 29407**

### MARINE RESOURCES DIVISION

**Senior Official:** James A. Timmerman, Jr., Ph.D., Director

**Scientific Staff:** 7 Biologists

**Major Interests:** Conservation, Marsh studies

**Primary Research Disciplines:** Fisheries, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Planning and administration, Consulting

**Financial Sponsorship:** 100% State Government

**Shore Laboratory Facilities and Equipment:** Construction has begun on a state marine resources center at Ft. Johnson near Charleston. The first phase will involve erection of a laboratory and multi-story administration building. An existing concrete and steel boat slip has been rehabilitated for the research vessel. Procurement of equipment and instrumentation is anticipated in the near future.

**Research Vessels and Instrumentation:** A converted 50 foot shrimp trawler powered by a single screw Gray Marine 671 engine with auxiliary diesel generator has accommodations for three scientists. Instrumentation includes:

Modified boom for trawling
Fathometer
Navigation system - Loran
Radio telephone
Live tank for holding specimens
Winch

**Availability of Facilities for Use by Non-Organizational Individuals:** Available by schedule only

**Individuals to Contact for Use of Facilities:**

James A. Timmerman, Jr., Ph.D., Director, Marine Resources Division
Charles M. Bearden, Chief, Marine Resources Management and Services

**Publications:** The quarterly newsletter, *Coastal Fisheries Report,* Technical Report Series, Annual Reports of the South Carolina Wildlife Resources Department

**Reference Material Available:** Complete file of all biological records on marine fisheries survey work conducted at Bears Bluff Laboratories; the contents of the Bears Bluff Library are available at The Citadel. Holdings are extensive with complete volumes of the major fisheries and marine biological journals and serials.

**Architects model of the South Carolina Wildlife Resources Department's Marine Science Center.**

*Photo courtesy of the South Carolina Wildlife Resources Department*



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## U.S. DEPARTMENT OF AGRICULTURE
## SOIL CONSERVATION SERVICE

**901 SUMTER STREET**
**COLUMBIA, SOUTH CAROLINA 29201**

**Specific Division:** Not applicable

**Senior Official:** William W. Neely, State Biologist

**Scientific Staff:** 2 Biologists

**Major Interests:** Wetland and water management for fish and wildlife and for recreational use

**Primary Research Disciplines:** Ecology, Estuarine and marsh studies, Feasibility of marshland uses

**Primary Services:** Planning and development, Practical application of technique, Consulting

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** More than 100 ponds owned by cooperating private landowners

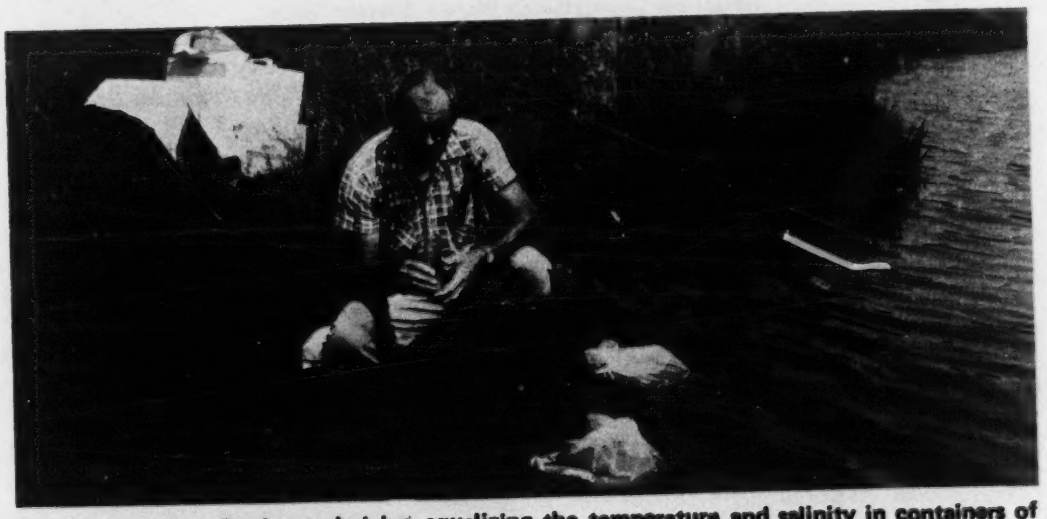
**Research Vessels and Instrumentation:** None

**Availability of Facilities for Use by Non-Organizational Individuals:** By special arrangement only

**Individuals to Contact for Use of Facilities:** William W. Neely, State Biologist

**Publications:** Results of research are usually published upon completion of a project

**Reference Material Available:** Information not provided



**Soil Conservation Service technician equalizing the temperature and salinity in containers of post-larval shrimp with that of salt-water pond water before shrimp are released.**

*Photo courtesy of U.S. Department of Agriculture, Soil Conservation Service*

## U.S. DEPARTMENT OF THE ARMY
## CHARLESTON DISTRICT, CORPS OF ENGINEERS

**P. O. BOX 919**
**CHARLESTON, SOUTH CAROLINA 29402**

**Specific Division:** Not applicable

**Senior Official:** Col. Burke W. Lee, District Engineer

**Scientific Staff:** 27 Engineers

**Major Interests:** Shore processes, Tidal flow and circulation patterns

**Primary Research Disciplines:** Civil engineering

**Primary Services:** Data collection, Data analysis

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** None

**Research Vessels and Instrumentation:** 2 Surveyboats, the *Ashepoo* and the *Waccamaw,* are 65 foot LOA T-boats. Each has the following equipment:

Compass
Recording fathometers - Models ES-1025 and ES-130
Navigation equipment - Hastings Raydist
Marine radio

2 Hopper dredges, the *Hyde* and the *Gerig,* are 351 foot LOAs. Each is equipped with:

Hydrographic dredge equipment

The launch *Cooper* is a 29 foot Express Cruiser used for project inspection and hydrographic surveys. Equipment includes:

Fathometer
Radio

12 17 foot boats with outboard motors are used for field sampling and survey work. Available equipment includes:

Phleger corers
Current direction indicators
Current meters - Price type AA
Built in equipment platforms
400cc samplers - Kemmerer type
50 pound sounding weights
Sounding reels with depth indicators - Type B-50
8 Rocking suspension rigs are available for use on the larger boats

**Availability of Facilities for Use by Non-Organizational Individuals:** Not indicated

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Reports upon completion of projects

**Reference Material Available:** A small technical library containing Corps of Engineers reports, river basin reports, hydraulics and technical engineering publications, and related State and Federal Government publications

## U.S. DEPARTMENT OF THE INTERIOR
## GEOLOGICAL SURVEY

**2346 TWO NOTCH ROAD**
**COLUMBIA, SOUTH CAROLINA 29204**

### WATER RESOURCES DIVISION

**Senior Official:** John S. Stallings, District Chief

**Scientific Staff:** 4 Geologists, 6 Engineers, 2 Chemists, 1 Physicist, 2 Draftsmen, 12 Technicians

**Major Interests:** Hydraulics, Hydrology

**Primary Research Disciplines:** Geological oceanography, Chemical oceanography, Physical oceanography, Estuarine and marsh studies

**Primary Services:** Data collection, Data analysis, Compilation and statistical analysis, Equipment design and evaluation, Equipment testing and evaluation, Planning and administration, Investigations performed on a contract basis.

**Financial Sponsorship:** Federal Government, State Government (Percentages not specified)

**Shore Laboratory Facilities and Equipment:** No laboratory facilities are operated by the U.S. Geological Survey in South Carolina, but use is made of the agency's laboratories in Raleigh, North Carolina. Data processing equipment in the Washington, D.C. office is presently used in the estuarine studies being conducted in South Carolina.

**Research Vessels and Instrumentation:** A 20 ft., 120 h.p. inboard-outboard boat is used for estuarine studies. Equipment includes:

Sediment collecting equipment
Water collecting equipment
Conductivity meters
Dissolved oxygen meters
Temperature meters

**Availability of Facilities for Use by Non-Organizational Individuals:** Not available

**Individuals to Contact for Use of Facilities:** Not applicable

**Publications:** Reports are normally published upon completion of each study or investigation.

**Reference Material Available:** An extensive library of U.S. Geological Survey publications is maintained.

# ORGANIZATIONS BASED OUTSIDE OF THE CAROLINAS AND GEORGIA

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
P. O. BOX 1207
PASCAGOULA, MISSISSIPPI 39567

## EXPLORATORY FISHING AND GEAR RESEARCH BASE

**Senior Official:** Norman L. Pease, Acting Base Director

**Scientific Staff:** 12 Biologists, 1 Engineer, 7 Technicians, 6 Others (not specified)

**Major Interests:** Exploratory fishing and gear research

**Primary Research Disciplines:** Fisheries

**Primary Services:** Equipment design and development, Equipment testing and evaluation, Consulting

**Financial Sponsorship:** 100% Federal Government

**Shore Laboratory Facilities and Equipment:** Storage and retrieval facilities are available through the Exploratory Data Center for exploratory and biological data collected between 1950 and the present, along with analyses of the data.

**Research Vessels and Instrumentation:** The *R/V Oregon II,* is a 170 foot, 700 ton vessel powered by two 800 h.p. diesel engines which drive one controllable pitch propeller through a compound reduction gear. The vessel has accommodations for eleven scientists. Instrumentation includes:

4 Aquaria
Bathythermograph
Nansen bottles
2 Hydraulic cranes - deck mounted
4 Depth sounders with a maximum range up to 6,000 fms.
Automatic radio direction finder
High resolution vertical and horizontal scanning fish finders
5 Freezers with temperature controls from $-20^{\circ}$F to $+38^{\circ}$F and a capacity for 60 tons of fish
Navigation system - Loran-A and Loran-C
2 Radar transceivers
Speed-distance log
Chemically resistant specimen storage tanks
Closed-circuit television system

**U.S. Department of Commerce**
**National Oceanic and Atmospheric Administration**
**National Marine Fisheries Service**
**Exploratory Fishing and Gear Research Base – Continued**

Single and double side band transceivers for long and short range voice communications

Water sample processing equipment

Winches:

Bathythermograph with a capacity for 3,000 feet of 1/8" cable

Single drum hydrographic with "A" frame and a capacity for 12,000 feet of 3/16" cable

2 Single drum reversible with a capacity for 6,000 feet of 1" cable

Reversible, parallel shaft, combination purse seine-trawl with a capacity for 9,000 feet of ½" cable

5 Slaking for handling retrieving lines to nets, each with a capacity for 250 feet of 3/4" rope

**Availability of Facilities for Use by Non-Organizational Individuals:** Available

**Individuals to Contact for Use of Facilities:** Norman L. Pease, Acting Base Director

**Publications:** Bureau of Commercial Fisheries series

**Reference Material Available:** 5,000 bound volumes, 2,500 reprints, all available Bureau of Commercial Fisheries publications

**The Oregon II, research vessel of the National Marine Fisheries Service.**

*Photo courtesy of National Marine Fisheries Service*

**U.S. DEPARTMENT OF COMMERCE**
**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**
**NATIONAL MARINE FISHERIES SERVICE**
**HIGHLANDS, NEW JERSEY 07732**

**SANDY HOOK MARINE LABORATORY**

**Senior Official:** Lionel A. Walford, Ph.D., Director

**Scientific Staff:** 2 Oceanographers, 23 Biologists, 1 Cartographer, 20 Technicians

**Major Interests:** Resource surveys, Biological research

**Primary Research Disciplines:** Biological oceanography, Ecology, Fisheries, Estuarine and marsh studies

**Primary Services:** Data collection, Compilation and statistical analysis, Investigations performed on a contract basis

**Financial Sponsorship:** 93% Federal Government, 5% Non-Profit Organization, 2% Public Service Utilities

**Shore Laboratory Facilities and Equipment:** Special facilities include a 32,000 gallon sea tank with complete environmental control for behavioral studies and a 36 foot flume for studying thermal reactions to fishes.

**Research Vessels and Instrumentation:** The *Dolphin,* a 107 foot, steel hulled, 400 ton diesel powered vessel with 1200 h.p., has accommodations for 16 people and a laboratory for carrying out onboard analysis. Instrumentation includes:

Bathythermograph
Depth recorder
Dredges
Bottom grabs
Navigation system - Loran
Plankton nets
Radar
Radio telephone
Large trawling gear winches

The *Challenger,* a 65 foot T-boat hull, diesel powered, has accommodations for 6. Instrumentation includes:

"A" frame
Dredges
Navigation system - Loran
Nets
Radar
Radio
Scuba gear
Winches

In addition to these two vessels, the Laboratory also operates several smaller craft fitted with winches appropriate for handling a variety of light sampling gear.

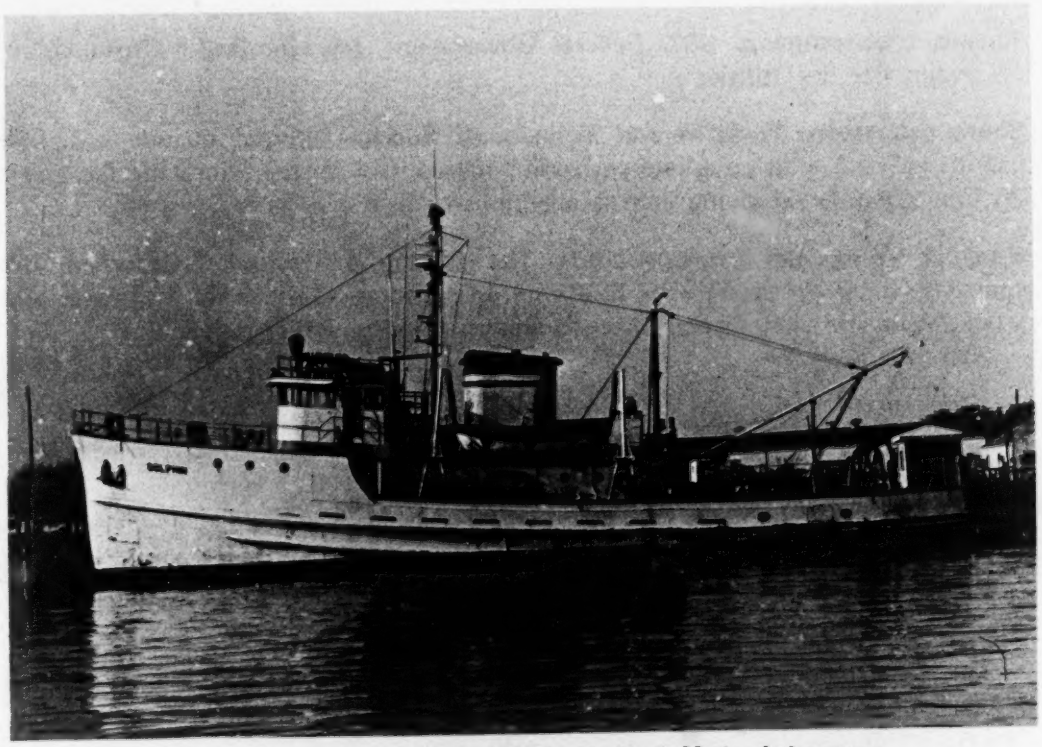
**U.S. Department of Commerce**
**National Oceanic and Atmospheric Administration**
**National Marine Fisheries Service**
**Sandy Hook Marine Laboratory – Continued**

**Availability of Facilities for Use by Non-Organizational Individuals:** Available under cooperative agreement

**Individuals to Contact for Use of Facilities:**
L. A. Walford, Ph.D., Director
Stuart Wilk, Vessel Supervisor
Daryl Mayberry, Administrative Assistant

**Publications:** Resource reports, Research reports, Technical reports

**Reference Material Available:** Extensive holdings on marine animals, hydrography, and subscriptions to 200 technical journals; present holding include 1,200 books and 11,800 reprints.



**The Dolphin, research vessel of the Sandy Hook Marine Laboratory.**

*Photo courtesy of Sandy Hook Marine Laboratory*

# INDEX OF ORGANIZATIONS

**GEORGIA**

BRUNSWICK JUNIOR COLLEGE
Fourth Street at Altama
Brunswick, Georgia 31520

DAMES AND MOORE
1314 West Peachtree Street, N.E.
Atlanta, Georgia 30309

EMORY UNIVERSITY
Atlanta, Georgia 30322

GEORGIA DEPARTMENT OF MINES, MINING AND GEOLOGY
19 Hunter Street, S.W.
Atlanta, Georgia 30334

GEORGIA GAME AND FISH COMMISSION
Coastal Fisheries Research and Development Program
P. O. Box 1097
Brunswick, Georgia 31520

GEORGIA INSTITUTE OF TECHNOLOGY
Atlanta, Georgia 30332

GEORGIA SOUTHERN COLLEGE
Statesboro, Georgia 30458

GEORGIA STATE UNIVERSITY
33 Gilmer Street, S.E.
Atlanta, Georgia 30303

GEORGIA STATE WATER QUALITY CONTROL BOARD
State Health Building
47 Trinity Avenue, S.W.
Atlanta, Georgia 30334

LAW AND COMPANY
P. O. Box 1558
Atlanta, Georgia 30301

MAYES, SUDDERTH AND ETHEREDGE, INC.
550 Interstate North Parkway
Atlanta, Georgia 30339

SKIDAWAY INSTITUTE OF OCEANOGRAPHY
55 West Bluff Road
Savannah, Georgia 31406

UNIVERSITY OF GEORGIA MARINE INSTITUTE
Sapelo Island, Georgia 31327

ENVIRONMENTAL PROTECTION AGENCY
Southeast Water Laboratory
College Station Road
Athens, Georgia 30601

**NORTH CAROLINA**

CAPE FEAR TECHNICAL INSTITUTE
411 North Front Street
Wilmington, North Carolina 28401

CARTERET COUNTY PUBLIC SCHOOLS
Regional Marine Science Project
Beaufort, North Carolina 28516

COASTAL ZONE RESOURCES CORPORATION
4009 Oleander Drive
P. O. Box 848
Wilmington, North Carolina 28401

DUKE UNIVERSITY MARINE LABORATORY
Beaufort, North Carolina 28516

EAST CAROLINA UNIVERSITY
Marine Science Center
P. O. Box 758
Manteo, North Carolina 27954
and
P. O. Box 2577
Greenville, North Carolina 27834

THE INTERNATIONAL NICKEL COMPANY, INC.
Francis L. LaQue Corrosion Laboratory
P. O. Box 656
Wrightsville Beach, North Carolina 28480

MARINE CHEMURGICS, INC.
RFD 1, Box 99 (Ocean)
Newport, North Carolina 28570

MARITIME SERVICES, INC.
P. O. Box 335
Elizabeth City, North Carolina 27909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THE MOGUL CORPORATION
1201 South Graham Street
P. O. Box 1267
Charlotte, North Carolina 28201

NORTH CAROLINA DEPARTMENT OF CONSERVATION AND DEVELOPMENT
Division of Commercial and Sports Fisheries
Box 27687
Raleigh, North Carolina 27611
and
P. O. Box 338
Morehead City, North Carolina 28557

NORTH CAROLINA STATE UNIVERSITY
Pamlico Marine Laboratory
Aurora, North Carolina 27806

RESEARCH TRIANGLE INSTITUTE
Engineering and Environmental Sciences Division
P. O. Box 12194
Research Triangle Park, North Carolina 27709

SOUTHERN TESTING AND RESEARCH LABS, INC.
607 Park Avenue
Wilson, North Carolina 27893

UNIVERSITY OF NORTH CAROLINA
Chapel Hill, North Carolina 27514

U. S. DEPARTMENT OF THE ARMY
Wilmington District, Corps of Engineers
P. O. Box 1890
Wilmington, North Carolina 28401

U. S. DEPARTMENT OF THE INTERIOR
Office of Saline Water
Wrightsville Beach Test Facility
P. O. Box 597
Wrightsville Beach, North Carolina 28480

WRIGHTSVILLE BEACH BIO-MEDICAL LABORATORY
7205 Wrightsville Avenue
Wilmington, North Carolina 28401

**SOUTH CAROLINA**

THE CITADEL
Charleston, South Carolina 29409

CLEMSON UNIVERSITY
Clemson, South Carolina 29631

MEDICAL UNIVERSITY OF SOUTH CAROLINA
80 Barre Street
Charleston, South Carolina 29401

SOUTH CAROLINA WATER RESOURCES COMMISSION
2414 Bull Street
Columbia, South Carolina 29201

SOUTH CAROLINA WILDLIFE RESOURCES DEPARTMENT
2024 Maybank Highway
Charleston, South Carolina 29407

UNIVERSITY OF SOUTH CAROLINA
Columbia, South Carolina 29208

U. S. DEPARTMENT OF AGRICULTURE
Soil Conservation Service
901 Sumter Street
Columbia, South Carolina 29201

U. S. DEPARTMENT OF THE ARMY
Charleston District, Corps of Engineers
P. O. Box 919
Charleston, South Carolina 29402

U. S. DEPARTMENT OF THE INTERIOR
U. S. Geological Survey
2346 Two Notch Road
Columbia, South Carolina 29204

**ORGANIZATIONS BASED OUTSIDE THE CAROLINAS AND GEORGIA**

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
National Marine Fisheries Service
Exploratory Fishing and Gear Research Base
P. O. Box 1207
Pascagoula, Mississippi 39567

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
National Marine Fisheries Service
Sandy Hook Marine Laboratory
Highland, New Jersey 07732